BULLETIN
of the
Chicago Herpetological Society

Volume 34, Number 1
January 1999

BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY
Volume 34, Number 1
January 1999

Numismatic Herpetology: From Ancient Greece through 1800 AD . . . . . David Chiszar and Hobart M. Smith 1

Book Review: *A Photographic Guide to Snakes and Other Reptiles of Peninsular Malaysia, Singapore and Thailand* by Merle J. Cox, Peter Paul van Dijk, Jarujin Nabhitabhata and Kumthorn Thirakhupt . . . . . John C. Murphy 14

Unofficial Minutes of the CHS Board Meeting, December 18, 1997 15

Herpetology 1999 16

The Tympanum . . . . . Audrey A. Vanderlinden; Lisa Koester; Kraig Adler 20

Media Notes 22

Advertisements 23

Chicago Herpetological Society Statement of Income and Expense 24

Cover: A silver cistophoric tetradrachm from ancient Greece (probably Mysia, Pergamum), minted after 133 BC. Photograph by David Chiszar.

STAFF

Editor: Michael A. Dloogatch
Advertising Manager: Ralph Shepstone

1999 CHS Board of Directors

Audrey Vanderlinden, President
Michael A. Dloogatch, Vice-President
Gary Fogel, Treasurer
Karen Bielski, Recording Secretary
Lori King-Nava, Corresponding Secretary
Lisa Koester, Publications Secretary
Gino Martinez, Membership Secretary
Greg Brim, Sergeant-at-Arms
Jennie Picciola, Member-at-Large
Jenny Vollman, Member-at-Large
Donald G. Wheeler, Member-at-Large

The Chicago Herpetological Society is a nonprofit organization incorporated under the laws of the state of Illinois. Its purposes are education, conservation and the advancement of herpetology. Meetings are announced in this publication, and are normally held at 7:30 P.M., the last Wednesday of each month.

Membership in the CHS includes a subscription to the monthly *Bulletin*. Annual dues are: Individual Membership, $22.00; Family Membership, $25.00; Sustaining Membership, $50.00; Contributing Membership, $100.00; Institutional Membership, $38.00. Remittance must be made in U.S. funds. Subscribers outside the U.S. must add $12.00 for postage. Send membership dues or address changes to: Chicago Herpetological Society, Membership Secretary, 2060 N. Clark Street, Chicago, IL 60614. Publications are sent to U.S. members via third class bulk mail; the post office does not forward such mail, even if a special request is made to forward magazines.

Manuscripts published in the *Bulletin of the Chicago Herpetological Society* are not peer reviewed. Manuscripts should be submitted, if possible, on IBM PC-compatible or Macintosh format diskettes. Alternatively, manuscripts may be submitted in duplicate, typewritten and double spaced. Manuscripts and letters concerning editorial business should be sent to: Chicago Herpetological Society, Publications Secretary, 2060 N. Clark Street, Chicago, IL 60614. **Back issues** are limited but are available from the Publications Secretary for $2.50 per issue postpaid. **Visit the CHS home page at <http://www.Chicagoherp.org>.**

The BULLETIN of the Chicago Herpetological Society (ISSN 0009-3564) is published monthly by the Chicago Herpetological Society.

Copyright © 1999.

Bull. Chicago Herp. Soc. 34(1):1-13, 1999

Numismatic Herpetology: From Ancient Greece through 1800 AD

David Chiszar
Psychology Department, CB 345
University of Colorado
Boulder, CO 80309-0345

Hobart M. Smith
EPO Biology, CB 334
University of Colorado
Boulder, CO 80309-0334

Abstract

Examination of ancient Greek and Roman coins as well as Byzantine, medieval, sixteenth, seventeenth and eighteenth century coins revealed 1502 herpetological items. We identified trends in numismatic herpetological imagery, beginning with those associated with the Christianization of Rome and continuing with those visible in medieval Europe and those discernible in modern coinage. When the present coins are added to those previously described (1926, from 1801 to present) and to paper money featuring reptile or amphibian devices, the total number of herpetological numismatic items comes to 4565. Assuming this figure to represent 90% of the true total, we estimate that true total to be 5022.

Our previous work on this topic has concentrated on the modern era, 1801 AD to present, except for one paper that identified the earliest herpetological coins (Chiszar et al., 1996). Now we complete the story by considering herpetological coins throughout all of history prior to 1801 AD. Since the coinages of some geopolitical units and some periods of time have not yet been catalogued or have not been published in accessible sources, our counts are certain to be incomplete. Nevertheless, we are probably more than 90% complete, and the present figures can be used as a reasonable approximation of the entire population of world coins containing herpetological devices.

Table 1. Denominations of ancient Greek coins (Attic standard[1]).

Denomination	Grains	Grams[2]
Dekadrachm	675	43.7
Tetradrachm	270	17.5
Didrachm	135	8.8
Drachm	67.5	4.4
Tetrobol	45	2.9
Triobol = Hemidrachm	33.75	2.2
Diobol	22.5	1.5
Trihemiobol	16.9	1.1
Obol[3]	11.25	0.7

1. There were several standards for coin production in the Hellenic world, and a drachm could be as light as 60 grains on the Rhodian standard and as heavy as 97 grains on the Aeginetic standard. Hence, a scale is essential in studying ancient Greek coins. The term "stater" has been and continues to be used as a denomination, but it means different things in different places, ranging from drachm to tetradrachm. When "stater" appears in our list, it means a large silver coin, ranging anywhere in mass from 60 grains to over 300 grains. Finally, some standards had denominations not listed in this table. The only way to be certain of an odd denomination's characteristics is to locate the coin in the *Catalogue of Greek Coins in the British Museum* where you will find diameter and mass.

2. One gram = 15.43 grains.

3. There are coins even smaller than an obol: tritemorion (¾ obol), hemiobol (½ obol), trihemitartemorion (⅜ obol), tetartemorion (¼ obol), and hemitartemorion (⅛ obol).

Because the ancient coins have been catalogued by British writers and the books have been published by British firms, coin values are given in pounds. Moreover, these books are more than 20 years old, hence their values are far too low by today's standards. Accordingly, there is little point to listing coins along with their catalogue values, and we do not do so. Instead, we list coins according to major geopolitical units (≅ countries) of the Hellenic world and by the cities that struck the coins. If a city name appears in parentheses, that name is the modern one for the city. Following the city name is a date (or range of years) if one was given by Seaby (1975). Then the metal is mentioned, and, if the metal is silver, the coin's denomination is stated, as this will give the reader a sense of the size and original value of the coin (see Table 1). When a range of years is given (e.g., 450–350 BC), the smaller number (more recent date) should generally be accepted, as many dates in Seaby (1975) have been revised in this direction by subsequent authors. Table 2 presents 167 herpetological coins from the Hellenic world found in Seaby (1975), who catalogued a total of 3320 coins. Although these 167 items can be regarded as representative of ancient Greek herpetological coins, it is not the complete list. The *Catalogue of Greek Coins in the British Museum* contains more than 20 volumes, and we have found some coins in these volumes that are not listed in Seaby (1975) or anywhere else (Chiszar et al., 1997a). On the other hand, coins listed by Seaby are more likely to be encountered by collectors than coins not catalogued by him. Therefore, the herpetological items listed here are more-or-less available in the numismatic industry, and this justifies restricting Table 2 to Seaby.

Turning to ancient Rome, we list 139 herpetological items found in Sear (1974), who catalogued a total of 4312 Roman coins. Again, this series of herpetological coins is probably not complete, but is representative of items that are more-or-less available through coin dealers. Table 3 presents a list of denominations of Roman coins to facilitate comprehension of the notes in Table 4. Herpetological Roman coins are listed with catalogue numbers from Sear (1974) and with notes regarding denomination, metal and the herpetological device. As is customary, Republican coinage is presented first followed by Imperatorial and Imperial coins, arranged according to the emperor in power at the time the coins were struck.

text continues on page 5

Table 2. Herpetological Coins of Ancient Greece

Area	Seaby (1975) Number	Description
Spain	63	Balearic Islands, Ebusus (Iviga), 3rd century BC, copper/bronze, snake
Gaul	99	Togirix, 1st century BC, silver, togirix, snake
	113	Nemausus (Nimes), 1st century BC, copper/bronze, crocodile
Italy	115	Populonia, 450–350 BC, silver, didrachm, Gorgon head, snakes indistinct
	117	Populonia, 450–350 BC, silver, didrachm, Gorgon head, snakes indistinct and two caducei on reverse
	200	Tarentum, 3rd century BC, silver, diobol, caduceus
	201	similar
	269	Velia, 400–268 BC, silver, didrachm, caduceus
	315	Rhegium, 203–89 BC, copper/bronze, Asklepios seated holding serpent staff
	316	similar
	318	Rhegium, —, copper/bronze, Asklepios standing with serpent staff
	320	Terina, 440–400 BC, silver, stater, caduceus
	321	similar
Sicily	338A	Agrigentum, —, silver, hemidrachm, sea serpent
	339	similar
	355	Camarina, 413–405 BC, copper/bronze, lizard
	376B	Himera, —, copper/bronze, Gorgon head
	378A	Iaetia (Iato), after 241 BC, copper/bronze, Gorgon head
	402A	Panormus (Palermo), —, copper/bronze, Gorgon head
	405	Panormus (Palermo), —, copper/bronze, Gorgon head
	411	Selinus, —, silver, litra, snake
	420	Syracuse, 466–412 BC, silver, tetradrachm, sea serpent
	470	Siculo-Punic Coinage, 410–310 BC, silver, tetradrachm, caduceus
Macedon	476	Neapolis (Kavala), 500–411 BC, silver, stater, Gorgon head
	477	Neapolis (Kavala), 411–350 BC, silver, drachm, Gorgon head
	478	Neapolis (Kavala), 411–350 BC, silver, hemidrachm, Gorgon head
	479	Eion, 500–437 BC, silver, trihemiobol, lizard
	514	Strymonian District, Amphipolis, 424–358 BC, silver, tetradrachm, Medusa
	528	Kings of Macedon, Amyntas III, 381–369 BC, copper/bronze, eagle devouring serpent
	564	Interval, 286–277 BC, copper/bronze, Gorgon head, caduceus
Thrace	622	Aenus (Enez), 464–460 BC, silver, diobol, caduceus
	623	Aenus (Enez), 412–409 BC, silver, tetradrachm, caduceus
	624	Aenus (Enez), —, silver, diobol, caduceus
	652B	Thasos, —, silver, drachm, lizard
	672	Apollonia Pontica (Sozopol), 5th century BC, silver, drachm, gorgoneion
	682	Pautalia, Caracella, —, copper/bronze, fish-tailed serpent, coiled and rising
	684	Philippopolis, Elagabalus, —, copper/bronze, serpent staff of Asklepios
	711A	Moesia Inferior, odessus, —, copper/bronze, caduceus
	714	Sarmatia, 6th–5th century BC, copper/bronze, Gorgon head
	715	similar
Northern Greece	751	Homolium, 300–200 BC, copper/bronze, coiled serpent
	779	Pharsalus, 480–440 BC, silver, hemidrachm, serpents
	780	similar
	781	similar, but the denomination is one obol
	782	similar, but the denomination is one drachm
	791	Tricca, 300–190 BC, copper/bronze, Asklepios feeding serpent
	802	Sciathus, 400–200 BC, copper/bronze, caduceus

Table 2. Herpetological Coins of Ancient Greece (cont'd)

Area	Seaby (1975) Number	Description
	826	Cassope, late 4th century BC, copper/bronze, coiled serpent, head erect
Central Greece	893	Opus, 369–338 BC, silver, stater, serpent
	918	Coroneia, 387–374 BC, silver, obol, Gorgon head
	959	Chalcis, 520 BC, silver, tetrobol, eagle carrying serpent
	960	Chalcis, 369–336 BC, silver, drachm, eagle carrying serpent
	961	similar, with caduceus below eagle
	963	Chalcis, —, copper/bronze, eagle carrying serpent
	964	Chalcis, 196–146 BC, silver, octobol, eagle about to attack defensive serpent
	965	Chalcis, —, copper/bronze, eagle carrying serpent
	979	Athens, —, silver, obol, Gorgon head
	991	Athens, 406 BC, copper/bronze. There is no herp image on this coin. It has the head of Athena on obverse and an owl on reverse. This coin, however, was referred to by Aristophanes in "The Frogs" (405 BC). Hence the coin is sometimes called the "frog coin."
	1008	Athens, —, silver, tetradrachm, biga of serpents
	1023	Athens, —, copper/bronze, Gorgon head
	1036	Eleusis, 350–300 BC, copper/bronze, serpents
	1037	similar
	1038	similar
	1050	Aegina 700–550 BC, silver, stater, sea turtle with smooth shell
	1051	similar but denomination is one drachm
	1052	similar but denomination is one triobol
	1053	similar but denomination is one obol
	1054	550–480 BC, silver, stater, sea turtle with smooth shell
	1055	similar but denomination is one drachm
	1056	similar but denomination is one obol
	1057	similar but denomination is one hemiobol
	1058	480–431 BC, silver, stater, tortoise with shell divided in thirteen plates
	1059	similar
	1060	similar but denomination is one drachm
	1061	similar but denomination is one triobol
	1062	Aegina similar
	1063	similar but denomination is obol
	1064	similar but denomination is drachm
	1065	after 404 BC, silver, stater, similar
	1066	—, copper/bronze, turtle between two dolphins
	1076	Corinth, —, silver, trihemiobol, Gorgon head
	1082A	Corinth, 400–338 BC, silver, stater, beaded serpent
Peloponnesus	1144	Achaean League, Epidaurus, 243–146 BC, silver, hemidrachm, coiled serpent, head erect
	1163	Elis, Olympia, 510–471 BC, silver, stater, eagle flying, holding serpent in beak
	1167	Elis, Olympia, 510–471 BC, silver, stater, eagle standing, wings spread, holding serpent in beak and claws. (Similar to Mexican National Emblem.)
	1207	Laconia, Lacedaemon, 146–32 BC, copper/bronze, caduceus
	1228	Argos, —, copper/bronze, serpent
	1261	Arcadia, Pheneus, after 362 BC, silver, drachm, caduceus
	1264	Arcadia, Tegea, 420–370 BC, silver, trihemiobol, gorgoneion
	1266	Arcadia, Tegea, after 146 BC, copper/bronze, Medusa
	1323	Crete, Phaestus, 431–400 BC, silver, stater, serpent
	1325	Crete, Phaestus, 360–300 BC, silver, stater, Herakles attacking Hydra
	1335	Crete, Priansus, 430–200 BC, silver, stater, serpent
	1340	Crete, Sybrita, 4th century BC, silver, stater, caduceus

Table 2. Herpetological Coins of Ancient Greece (cont'd)

Area	Seaby (1975) Number	Description
Aegean Islands	1380	Seriphos, 2nd–1st century BC, copper/bronze, Gorgon head
Asia Minor	1401	Pontus, Amisus, 2nd–1st century BC, copper/bronze, Medusa
	1404	Pontus, Amisus, —, copper/bronze, Gorgon head
	1405	Cabeira (Niksar), 120–63 BC, copper/bronze, Gorgon head
	1407	Comana, 120–63 BC, copper/bronze, Medusa
	1408A	Laodicera, —, copper/bronze, Gorgon head
	1445A	Paphlagonia, Abonuteichus, later Ionopolis (Ineboli), —, copper/bronze, the serpent Glycon
	1447	Paphlagonia, Amastris (Amasra), 120–63 BC, copper/bronze, gorgoneion
	1460	Paphlagonia, Sinope, —, copper/bronze, Gorgon head
	1467B	Bithynia, Bithynium or Claudiopolis (Eski-hissar, near Boli), —, copper/bronze, caduceus
	1469	Bithynia, Calchedon (Kadikeui), after 394 BC, silver, drachm, caduceus
	1482	Bithynia, Nicaea, —, copper/bronze, winged serpent, serpent staff
	1498	Mysia, Adramyteum, 133–67 BC, silver, cistophorus, serpent
	1507	Mysia, Cyzicus, 3rd century BC, copper/bronze, caduceus
	1510	Mysia, Cyzicus, 98–211 AD, copper/bronze, serpents entwined
	1524	Mysia, Parium, 500–400 BC, silver, drachm, Gorgon head
	1525	Mysia, Parium, 350–300 BC, silver, hemidrachm, Gorgon head
	1533	Mysia, Pergamun (Bergama), 133–67 BC, silver, cistophoric tetradrachm, serpents
	1534	Mysia, Pergamun (Bergama), —, copper/bronze, staff of Asklepios
	1535	Mysai, Pergamun (Bergama), —, copper/bronze, serpent coiled around Omphalos
	1539	Mysia, Pergamun (Bergama), —, copper/bronze, serpent
	1601A	Aeolis, Larissa Phriconis (Bourounjik), 4th century BC, copper/bronze, caduceus
	1606	Lesbos, 550–440 BC, billon, stater, Gorgon head
	1611	Lesbos, 440–350 BC, electrum, hecte, serpent
	1613	Kolnon of Lesbos, 330–280 BC, copper/bronze, caduceus
	1613A	Lesbos, Antissa, 300–167 BC, copper/bronze, caduceus
	1645	Ionia, Ephesus, 133–67 BC, silver, cistophoric tetradrachm, coiled serpents
	1734	Ionia, Samos, 129–20 BC, copper/bronze, caduceus
	1780A	Caria, Astypalaea, 2nd century BC, copper/bronze, head of Medusa
	1788	Caria, Cos, 166–88 BC, silver, tetrobol, coiled serpent
	1790	Caria, Cos, —, copper/bronze, coiled serpent
	1821	Lydia, Blaundus (Suleimanli), 2nd–1st century BC, copper/bronze, caduceus
	1821B	Lydia, Caÿstriani, 2nd or 1st century BC, copper/bronze, caduceus
	1831	Lydia, Magnesia and Sipylum (Manisa), —, copper/bronze, serpent staff
	1835	Lydia, Mastaura, —, copper/bronze, python
	1851	Lydia, Tralles, 2nd century, silver, cistophorus, serpents
	1876A	Phrygia, Docimeium (Ichje Kara-hissar), —, copper/bronze, serpent
	1878	Phrygia, Eucarpeia (Emir Hissar), —, copper/bronze, caduceus
	1893B	Phrygia, Nacoleia, —, copper/bronze, caduceus
	1896A	Phrygia, Sebaste (Sivasli), —, copper/bronze, Hygieia feeding serpent
	1903	Lycia, 500–460 BC, silver, stater, tortoise
	1904	similar
	1943	Pisidia, Etenna, 1st century BC, copper/bronze, human female holding snake
	1947	Pisidia, Sagalassus (Aghlasan), —, copper/bronze, Herakles slaying the hydra
	1954	Pisidia, Termessus Major, —, copper/bronze, caduceus
	1956	Lycaonia, Iconium (Konia), 1st century BC, copper/bronze, Gorgon head
	1964	Cilicia, Corycus (Korgos), 1st century BC, copper/bronze, caduceus
	1968	Cilicia, Laerte, —, copper/bronze, serpent-footed giant
Syria and Asia	2222	Phoenicia, Marathus, 180–168 BC, copper/bronze, caduceus
	2239A	Phoenicia, Tyre (Sur), —, copper/bronze, Kadmos hurling stone at serpent

Table 2. Herpetological Coins of Ancient Greece (cont'd)

Area	Seaby (1975) Number	Description
	2465	Palestine, coins of the Jews, Herod I, —, copper/bronze, caduceus
	2587	Parthia, —, copper/bronze, caduceus
	2640	Bactria, 166–145 BC, silver, tetradrachm, Athena holding aegis
	2641	Bactria, 166–145 BC, silver, drachm, Athena holding aegis
	2642	Bactria, 166–145 BC, silver, drachm, Athena holding aegis
	2643	Bactria, 166–145 BC, silver, drachm, Athena holding aegis
	2644	Bactria, 166–145 BC, copper/bronze, Athena holding aegis
	2675	Bactria, —, copper/bronze, caduceus
Africa (Egypt)	2748	Alexandria (Claudius), copper/bronze, crocodile
	2749	Alexandria (Claudius), copper/bronze, caduceus
	2762	Alexandria (Nero), billon, caduceus
	2766	Alexandria (Nero), billon, agathodemon serpent
	2799	Alexandria (Hadrian), copper/bronze, crocodile
	2801	similar
	2819	Alexandria (M. Aurelius), billon, serpent
	2820	Alexandria (Faustina II), billon, Asklepios and serpent staff
	2878	Alexandria (Claudius II Gothicus), billon, caduceus
	2909	Menelaite Nome (Antoninus Pius), copper/bronze, crocodile
	2981	Melita, —, copper/bronze, caduceus
	2998	Mauretania, —, silver, denarius, crocodile

Although Tables 2 and 4 contain comparable numbers of coins, it should be recognized that Sear's book lists approximately 1000 more coins than did Seaby's book. Hence, herpetological coins constitute a significantly higher proportion of the Greek series (0.05) than of the Roman series (0.03; $\chi^2 = 15.91$, df = 1, $p < 0.01$), no doubt reflecting the greater use of zoological devices of all taxonomic categories by the Greeks than by the Romans. Various additional comparisons of the two series are presented in Chiszar et al. (1997a).

Probably the most important thing to glean toward the end of Table 4 is that the rich and varied herpetological devices associated with mythology and pagan religion disappeared completely from Roman coinage after Christianization of the empire under Constantine the Great (307–337). Indeed, the last two entries tell an interesting story. Earlier emperors had coins struck showing themselves stepping on a captured enemy of the empire while holding a banner, a weapon, or other signification of the glory and power of Rome. Following Christianization, this image remained except that instead of a banner or other secular item, the emperor held a long cross. Majorian and Severus III used a serpent as a surrogate enemy of Rome. Thus we see a complete transformation of attitude toward snakes, from the ophiophilia of the Greeks and pre-Christian Romans to the ophiophobia of post-Constantinian Rome.

Following the collapse of the Western Roman empire (410–476), the eastern or Byzantine empire continued in existence for almost another thousand years, until May 29, 1453. Sear (1987) lists 2645 Byzantine coins, and not a single one contains a herpetological device. However, a few images ought to be

text continues on page 8

Table 3. Denominations of ancient Roman coins (early Imperial Period under Augustus[1]).

Denomination	Metal	Value
Aureus	gold	25 silver denarii
Quinarius	gold	12½ silver denarii
Cistophorus[2]	silver	3 silver denarii
Denarius	silver	16 copper asses
Quinarius	silver	8 copper asses
Sestertius	orichalcum	4 copper asses
Dupondius	orichalcum	2 copper asses
As	copper	4 copper quadrantes
Semis	orichalcum	2 copper quadrantes
Quadrans	copper	¼ copper as

1. Numerous changes were introduced to the coinage under subsequent emperors, especially Nero and Caracalla. For example, Nero lowered the weights of gold and silver coins and reduced the fineness of the silver. Caracalla introduced a denomination, the antoninianus, equal in weight to 1½ denarii but tarified as 2 denarii, continuing the debasement trends seen under Nero. These trends continued and were occasionally reversed by subsequent emperors, giving rise to periodic reorganizations of the coinage and to occasional new denominations.

2. Struck at some Asiatic mints, especially in Asia Minor, long before the time of Augustus, but continued by him and subsequent emperors. This coin is also called a tetradrachm; hence, another synonym is "cistophoric tetradrachm." We mention this coin in detail because one of its types contains the "cista mystica," a distinctly herpetological device.

Table 4. Herpetological Coins of Ancient Rome

Roman Republican Coinage

Aes Grave

5. sextans, 269–242 B.C., bronze, cast, caduceus
31. similar
46. sextans, 241–222 B.C., bronze, cast, tortoise

Struck Coinage

98. quadrans, 205–195 B.C., copper/bronze, snake
236. denarius, 90–79 B.C., silver, caduceus
269. denarius, 55 B.C., silver, serpent
280. denarius, 47 B.C., silver, Medusa
283. denarius, 46 B.C., silver, Medusa
290. denarius, 42 B.C., silver, caduceus

Roman Imperatorial Coinage

Julius Caesar, 59–44 B.C.

309. denarius, silver, elephant trampling on serpent
329. denarius, silver, monster of Scylla
348. quinarius, silver, caduceus
358. cistophorus, silver, two interlaced serpents
359. similar

Roman Imperial Coinage

Augustus, 27–14 B.C.

372. cistophorus, silver, caduceus
373. denarius, silver, crocodile
401. quinarius, silver, two interlaced serpents (cista mystica)
420. quadrans, copper/bronze, caduceus
454. —, copper/bronze, crocodile
455. similar

Tiberius, 14–37 AD

475. as, copper/bronze, winged caduceus
487. sestertius, copper/bronze, winged caduceus

Claudius 41–54 AD

531. denarius, silver, Nemesis preceded by serpent

Nero, 54–68 AD

608. —, copper/bronze, caduceus
610. —, copper/bronze, serpent agathodemon

Vespasian, 69–79 AD

672. denarius, silver, caduceus
678. denarius, silver, winged caduceus
698. dupondius, copper/bronze, winged caduceus
706. semis, copper/bronze, winged caduceus

Titus, 79–81 AD

732. denarius, silver, winged caduceus
741. semis, copper/bronze, winged caduceus

Domitian, 81–96 AD

843. quadrans, copper/bronze, winged caduceus (This coin bears no legend or emperor's name.)

Nerva, 96–98 AD

867. quadrans, copper/bronze, winged caduceus

Trajan, 98–117 AD

915. dupondius, copper/bronze, Salus feeding serpent
949. —, copper/bronze, agathodemon serpent
952. —, copper/bronze, winged serpents

Hadrian, 117–138 AD

992. denarius, silver, crocodile
995. denarius, silver, Salus feeding serpent
1023. sestertius, copper/bronze, Salus feeding serpent
1027. dupondius, copper/bronze, Salus feeding serpent
1043. as, copper/bronze, Salus feeding serpent
172. tetradrachm, billon, agathodemon serpent
1105. —, copper/bronze, caduceus

Antoninus Pius, 138–161 AD

1125. as, copper/bronze, caduceus
1137. denarius, silver, caduceus
1141. denarius, silver, Salus feeding serpent
1147. denarius, silver, Salus feeding serpent
1170. sestertius, copper/bronze, Salus feeding serpent
1196. as, copper/bronze, caduceus
1197. quadrans, copper/bronze, winged caduceus

Marcus Aurelius, 161–180 AD

1318. denarius, silver, Salus feeding serpent
1391. aureus, gold, Salus feeding serpent
1411. sestertius, copper/bronze, Salus feeding serpent
1420. dupondius, copper/bronze, Salus feeding serpent

Lucius Verus, 161–169 AD

1485. dupondius, copper/bronze, Salus feeding serpent

Commodus, 177–192 AD

1493. denarius, silver, Salus feeding serpent

Table 4. Herpetological Coins of Ancient Rome (cont'd)

1503. denarius, silver, Salus feeding serpent
1531. denarius, silver, winged caduceus
1533. denarius, silver, Salus feeding serpent
1589. sestertius, copper/bronze, Salus feeding serpent

Clodius Albinus, 195–197 AD

1633. sestertius, copper/bronze, caduceus
1634. as, copper/bronze, Aesculapius

Septimius Severus, 193–211 AD

1725. —, copper/bronze, Asklepios
1726. —, copper/bronze, Asklepios
1777. sestertius, copper/bronze, caduceus

Caracalla, 198–217 AD

1791. denarius, silver, caduceus
1836. denarius, silver, Aesculapius
1855. denarius, silver, serpent-wreathed scepter
1882. —, copper/bronze, fish-tailed serpent

Geta, 209–212 AD

1910. denarius, silver, caduceus
1943. as, copper/bronze, Asklepios

Macrinus, 217–218 AD

1948. antoninianus, silver, Salus feeding serpent
1958. denarius, silver, Salus feeding serpent
1964. dupondius, copper/bronze, Salus feeding serpent

Diadumenian, 218 AD

1977. denarius, silver, Felicity holding caduceus

Elagabalus, 218–222 AD

1988. antoninianus, silver, Salus feeding serpent
2016. similar except denomination is denarius, silver
2017. denarius, silver, Salus feeding serpent, but she is in a different posture than in 1988
2021. denarius, silver, Felicity holding caduceus
2039. as, copper/bronze, Asklepios
2084. denarius, silver, Felicity holding caduceus
2085. similar except denomination is quinarius, silver
2088. similar except denomination is sestertius, copper/bronze
2089. similar except denomination is dupondius or as, copper/bronze

Severus Alexander, 222–235 AD

2105. denarius, silver, caduceus
2122. denarius, silver, Salus feeding serpent
2133. denarius, silver, Salus feeding serpent
2153. sestertius, copper/bronze, Salus feeding serpent
2207. denarius, silver, caduceus
2216. quinarius, silver, caduceus
2218. sestertius, copper/bronze, caduceus
2228. dupondius, copper/bronze, caduceus

Maximinus I, 235–238 AD

2246. denarius, silver, Salus feeding serpent
2255. sestertius, copper/bronze, Salus feeding serpent
2261. dupondius, copper/bronze, Salus feeding serpent

Pupienus, 238 AD

2318. sestertius, copper/bronze, caduceus

Gordian III, 238–244 AD

2375. denarius, silver, Salus feeding serpent
2404. sestertius, copper/bronze, Salus feeding serpent

Philip I, 244–249 AD

2475. antoninianus, silver, Salus feeding serpent
2476. antoninianus, silver, Salus feeding serpent
2487. similar to 2476 except denomination is quinarius
2513. as, copper/bronze, similar to 2476

Silbannacus, ca 248–249 AD

2588. antoninianus, silver, caduceus

Trajan Decius, 249–251 AD

2606. double sestertius, copper/bronze, caduceus

Herennius Etruscus, 251 AD

2640. antoninianus, silver, caduceus

Hostilian, 251 AD

2656. antoninianus, silver, caduceus
2663. sestertius, copper/bronze, caduceus

Trebonianus Gallus, 251–253 AD

2691. antoninianus, silver, Salus feeding serpent
2692. similar
2703. sestertius, copper/bronze, Salus feeding serpent
2708. as, copper/bronze, Salus feeding serpent

Volusian, 251–253 AD

2730. antoninianus, silver, Salus feeding serpent
2734. similar except denomination is quinarius

Table 4. Herpetological Coins of Ancient Rome (cont'd)

Valerian I, 253–260 AD

2797. antoninianus, silver, Salus feeding serpent

Gallienus, 253–268 AD

2848. antoninianus, silver, Aesculapius with serpent staff
2890. antoninianus, silver, Salus feeding serpent
2944. antoninianus, silver, Salus feeding serpent

Postumus, 259–268 AD

3026. antoninianus, billon, winged caduceus
3027. antoninianus, billon, staff of Aesculapius
3028. antoninianus, billon, Salus feeding serpent
3029. antoninianus, billon, Salus feeding serpent

Victorinus, 268–270 AD

3069. antoninianus, copper/bronze, Salus feeding serpent
3070. antoninianus, copper/bronze, Salus feeding serpent

Tetricus I, 270–273 AD

3080. antoninianus, copper/bronze, Salus feeding serpent

Claudius II Gothicus, 268–270 AD

3093. aureus, gold, Salus feeding serpent
3137. tetradrachm, billon, caduceus

Tacitus, 275–276 AD

3205. antoninianus, copper/bronze, caduceus
3211. antoninianus, copper/bronze, Salus feeding serpent

Florianus, 276 AD

3230. antoninianus, copper/bronze, Salus feeding serpent

Probus, 276–282 AD

3266. antoninianus, copper/bronze, Salus feeding serpent
3267. antoninianus, copper/bronze, Salus feeding serpent

Numerian, 283–284 AD

3334. antoninianus, copper/bronze, caduceus

Carinus, 283–285 AD

3372. antoninianus, copper/bronze, Salus feeding serpent

Diocletian, 284–305 AD

3422. antoninianus, bronze, Salus feeding serpent

Carausius, 287–293 AD

3464. antoninianus, bronze, Salus feeding serpent

Allectus, 293–296 AD

3485. denarius, billon, Salus feeding serpent

Maximianus, First Reign, 286–305 AD

3521. antoninianus, bronze, Salus feeding serpent

Majorian, 457–461 AD

4253. solidus, gold, Majorian stepping on serpent while holding long cross

Severus III, 461–465 AD

4258. solidus, gold, Severus stepping on serpent while holding long cross

mentioned, as they anticipate later developments of interest to herpetologists. For example, a feature present on many dozens of Byzantine coins is a helmeted bust holding a spear and shield. On the shield is a small figure of a horseman with lance attacking an indistinct line beneath the horse. The line is usually interpreted as a human enemy of the state or faith (Grierson, 1968), but the similarity of this device to that present within the breast of the double headed eagle on many early Russian coins (Chiszar et al., 1997b) is striking and suggests the possibility that the indistinct line might be a serpent or dragon. We will not argue this point further, preferring to leave it to Byzantine specialists. Our goal is merely to reveal that although no unambiguous herp appears on any Byzantine coin, there is nevertheless reason for herpetologists to study the series. Another reason has to do with the appearance of archangel Michael, St. George and several other military saints. None of these saints is shown fighting dragons, but St. George and St. Demetrius are sometimes shown on horseback in military dress, anticipating the images that would later arise in Britain and Russia. The first appearance of St. George on Byzantine coinage was during the reign of John II, Comnenus (1118–1143). Archangel (=Saint) Michael first appeared on a coin during either the reign of Michael IV, the Paphlagonian (1034–1041) or during that of Michael V, Kalaphates (1041–1042; see Sear, 1987, coin 1826, p. 354). Again, these coins are not herpetological, but they surely anticipate herpetological developments in subsequent centuries. Therefore, although we count zero herpetological coins in the Byzantine series, we identified 498 coins as representing one or another of the points made here.

Byzantium served a profoundly important function by virtue

of its position at the crossroads of Europe and Asia. Constantly under threat from the east, it blocked a major route into Europe by would-be invading armies from Asia and Asia Minor. By the time Constantinople finally fell to Sultan Muhammed II (=Muhammed the Conqueror) and his Ottoman troops in 1453, European nations had emerged from feudalism and many were strong enough to defend themselves against further encroachment from Asia. Had Byzantium not existed, there would undoubtedly have been early and strong Asian cultural influences in western Europe, including numismatic influences. As it happened, however, the intrusion into Europe of Asian coinage was minimal and such coins never became models for Europeans, allowing the coinage of western nations to evolve according to indigenous political, religious and economic factors. This was a happy state of affairs from a herpetological perspective, as the coins of the Muhammadan Turks and related groups were herpetologically depauperate. The Mongol Khans might have brought interesting dragon images, but at a cost none of us can easily contemplate.

In England, almost no coinage was minted from the time of the Roman departure early in the fourth century until the seventh century when economic and other pressures demanded that a reliable medium of exchange be regularized, permitting merchants, churches and courts to operate independently of coinage imported from the continent. By the eighth century there were northern and southern English coins (sceattas) bearing crude dragon-like beasts (see Sutherland [1973] for an illustration of such a coin from the reign of Alchred, 765–774). By the end of the century there were serpent pennies coined by several rulers (e.g., Pendred). Of greater importance was the appearance under Edward IV, 1461–1470, of a coin called "the angel," showing archangel Michael spearing and trampling the dragon of evil. Michael's image was humorous by modern standards (e.g., see the angels of the Isle of Man, Chiszar and Smith, 1996, p. 79), as he was quite feathery from head to toe. Nevertheless, this coin (80 grains, worth 6s 8d) was the ancestor of modern angels. There also was a half angel (called an angelet). Finally, almost a century later came the first appearance upon a British coin of St. George, England's patron saint. The event occurred during the so-called Wolsey coinage (1526–1530) of Henry VIII, when the king launched a war with France and demanded that Lord Chancellor Wolsey stabilize England's monetary system and generate more money. In this context, Wolsey created two new coins, one of which was the gold "George Noble," containing a spirited figure of St. George, mounted on horseback and doing battle with a dragon, an image that has remained part of the British Empire's numismatic history ever since. Wolsey's fiscal and political actions in behalf of Henry VIII were largely responsible for the nation's rise to the status of a sixteenth century world power. Nevertheless, Wolsey was eventually charged with treason in an indictment containing 44 counts, one of which involved usurping the prerogative of the king in the matter of issuing a silver coin, a (nonherpetological) groat containing an unwelcome symbol of Rome (a Cardinal's hat). Wolsey's popularity had waned partly because of his failure to secure a divorce for Henry from Catherine of Aragon who had been unable to produce a male heir, and partly because Wolsey's enemies at court made him a scapegoat for crimes of the clergy that were being protested with increasing vigor by the populace (Sheehan, 1992). Hence, it became possible to list a series of charges, some clearly trumped up by clever court lawyers, as was the case for the groat. Wolsey lost most of his power through this successful coup and he eventually died while en route to London to answer the charges. He remains, however, the architect of one of the most popular herpetological devices ever to grace coins and paper money.

The definitive catalogue of British coins (Seaby and Seaby, 1976) lists 3034 items prior to the nineteenth century, of which 89 are herpetological. The majority of the latter contain Michael or Saint George and their respective dragons, although seven early (575–775 AD) Anglo Saxon coins contain a dragon-like animal, perhaps reflecting a numismatic history similar to that described for Russia by Chiszar et al. (1997b). Included in the herpetological subtotal are six coins minted during the Roman occupation, all bearing Salus feeding the serpent, and seven Celtic coins containing snakes. Celtic and Roman coins portrayed snakes in a more-or-less positive light, whereas all later herpetological coins had demonic dragons. Thus, the ophiophobic characteristics of Christianized Rome were predictive of the devices that would appear on English money. The following paragraphs will show that the same was true for the coins of Europe. It is strange that the earlier and longer ophiophilic traditions of the Greeks and Romans were completely stamped out by Christianity and that none of these traditions would resurface during the millennium after the fall of Rome. Yet, this is exactly what happened, with church influence on human artistic impulses being so strong and pervasive as to channelize expressivity into approved (e.g., ophiophobic) directions and to discourage virtually any movement towards ophiophilia.

Study of other medieval states turned up disappointingly few herpetological coins, except for Russia which was discussed by Chiszar et al. (1997b) and will not be rehashed here. Herpetological coins were struck in some of the German states, usually containing a knightly figure on horseback attacking a dragon and usually interpreted at St. George. The Swiss canton of Basel produced coins with a spectacular basilisk device. The Milan coat of arms contains two snakes and appears on much of the coinage of that city, although early coins often had only one snake, but it filled most of the reverse. Hence, these coins are of considerable interest to herpetological numismatists. A neighbor to the southeast of Milan, the Duchy of Ferrara, produced a coin in 1493 with a portrait of the Duke Ercole d'Este (1471–1505) on the obverse and the seven-headed Lernaean hydra on the reverse (Grierson, 1979). No catalogues or checklists of the coins from these city-states are known to us, except for material from the seventeenth century to present, so we can only guess at the extent of the herpetological coinage they produced between the fall of Rome and 1599. At least 100 coins must be involved from Russian and eastern European nations, with another 100 from western Europe.

Seventeenth century coins are catalogued by Krause and Mishler (1996), and Table 5 presents a summary of the herpetological coins we discovered, arranged by state of origin. The

Table 5. Herpetological coins from the seventeenth century (1601–1700).

Geopolitical Unit	Herpetological Image	Number of Coins
Austrian States/Dietrichstein	snake	1
German States/Friedberg	dragon	2
German States/Mansfeld-Artern	dragon	74
German States/Mansfeld-Bornstedt	dragon	63
German States/Mansfeld-Eigentliche-Hinterort	dragon	120
German States/Mansfeld-Eisleben	dragon	28
German States/Mansfeld-Friedberg	dragon	7
German States/Mansfeld-Schraplau	dragon	5
German States/Nurnberg	caduceus	1
German States/Saxe-Jena	caduceus	3
German States/Saxony	snake	1
German States/Saxony	dragon	1
German States/Worms	dragon	8
Danish India (Tranquehar)	dragon	1
Italian States/Casale	dragon	10
Italian States/Desana	dragon	2
Italian States/Messerano	dragon	4
Italian States/Milan	snakes	14
Italian States: Tassarolo	dragon	1
Italian States: Urbino	dragon	1
Russia*	dragon	2
Switzerland: Basel	basilisk	15
Transylvania	lizards–dragons	12
Papal States: Vatican	demons, dragon-like	5
Papal States: Ferrara	dragon	30

* Numerous other Russian coins struck between 1601–1700 contain a mounted horseman but not a dragon. This image was used frequently as an overstrike on European coins that circulated in Russia. Interestingly, the man in this image is referred to as a czar by Krause and Mishler (1996). This agrees with an argument presented in Chiszar et al. (1997).

Table 6. Herpetological coins from the eighteenth century (1701–1800).

Geopolitical Unit	Herpetological Image	Number of Coins
German States: Friedberg	dragon	4
German States: Mansfeld-Bornstedt	dragon	7
German States: Montfort	snake	2
German States: Saxony	caduceus	1
Italian States: Milan	snakes	29
Italian States: Urbino	dragon	1
Russia	dragon	409
Switzerland: Basel	basilisk	38
Switzerland: Beromuenster	dragon	5

Table 7. Percent of coins falling into nine catalogue value categories for three periods of time.

Value Categories	Period		
	1601–1700	**1701–1800**	**1801–Present**
0.00 – 1.00	0.0	0.0	4.5
1.01 – 10.00	0.0	0.0	13.3
10.01 – 25.00	0.0	0.6	14.1
25.01 – 50.00	1.0	2.8	15.5
50.01 – 100.00	1.5	7.1	9.3
100.01 – 1000.00	50.4	41.8	31.7
1000.01 – 5000.00	17.5	15.3	6.4
> 5000.00	3.5	0.9	2.9
Blank*	26.1	31.5	2.3

* This category is used by cataloguers when insufficient data exist on the availability of coins or on auction sales. It may be assumed that coins assigned to this category are valuable, generally worth US $100 or more.

vast majority (95%) of these coins contain dragons, usually under the lance of St. George, indicating a perpetuation of the herpetophobic tradition established during the last century of Roman coinage and seen in the medieval coinage of Europe and Russia. A similar situation is seen in eighteenth century material catalogued by Krause and Mishler (1993) and shown in Table 6, 78% of the coins containing dragons. Some of the images of both centuries are spectacular, particularly the Swiss basilisks and the dragon-like demons of the Vatican. They combine with the dragons attacked by St. George to remind us that herptiles have become the internationally recognized symbols of the real and imaginary evils that beset the affairs of human beings. Having occupied this role for well over one thousand years, herpetological devices would seem to be irreversibly associated with the dark side of human nature. Data from the nineteenth and twentieth centuries reveal that this association remains strong to the present time, as dragons occupy a substantial fraction of modern coins, although it is possible to reinterpret at least some of these dragons (Chiszar and Smith, 1997). However, a new trend is toward increased frequency of realistic representation of herptiles, sometimes in connection with coats of arms and other devices that celebrate local fauna, and sometimes in connection with conservation efforts and with scientific research in vertebrate paleontology (Chiszar and Smith, 1996, 1997). These welcome images provide a counterpoint to the still-present dragons, giving modern coinage a rich, multivariate appearance. Another recent development is the return of the caduceus, one of the most common herpetological devices in the classical world and, likewise, a common herpetological device on modern coinage, but it had become virtually extinct after the Christianization of Rome and during the subsequent millennium. It was as if the use of dragonized snakes as universal symbols of evil precluded the use of snakes in any positive context, until the ages of empire and colonization placed an intensified emphasis on international commerce, creating expanded needs for money and, hence, for devices to decorate money. The German states kept the caduceus alive, so to speak, on a few coins, but the real recovery of this device began in the nineteenth century where it became reestablished as a symbol of commerce and business as it had been in ancient times (Chiszar and Smith, 1996). The American army, in its confused search for a symbol for its medical corps, seized upon the Caduceus in 1902 (instead of the more appropriate staff of Asklepios = Aesculapius; Friedlander, 1992), thereby attaching herpetological imagery to another positive human enterprise. Accordingly, the twentieth century closes with herpetological devices enjoying a level of popularity even greater than they did in the ancient world.

Table 8. Summary of the herpetological items discovered in our research.

Time Period or Cultural Epoch	Number of Coins
1801 – 1996 (modern)	1926
Medieval – 18th Century	1196
Byzantine	0
Ancient Rome	139
Ancient Greece	167
All Periods	3428*

* Add to this the 1133 pieces of paper money identified by Chiszar and Smith (1997), and the total number of herpetological numismatic items comes to 4561. Recognizing that we have undoubtedly missed some coins and notes, we prefer to regard our total as being about 90% of the true total. For example, the addendum adds three notes and one coin to the modern lists, raising our current total to 4565, and we will surely continue to discover items that we missed during earlier studies. Hence, incrementing 4565 by 10% gives 5022 as a reasonable estimate of the true total of herpetological coins and notes since the earliest use of money.

Collecting herpetological coins and paper money allows a person to visit radically different attitudes during different time periods. Alas, however, the cost of this adventure becomes prohibitive as one goes back in time (see Table 7). The percent of high quality coins purchasable for US $100 or less is 56.8 for the modern period, 10.5% for coins of the eighteenth century and 2.5% for the seventeenth century. Although authoritative catalogue values are currently unavailable for earlier material, the trend seen in the last three figures continues as we go further back. On the other hand, many ancient coins are available for surprisingly small amounts of money. These will never be high quality silver or gold coins, but some spectacular herpetological devices can be found on bronze (see Tables 2 and 4). So, do not ignore the ancient world in your effort to assemble a historical collection of herpetological numismatic devices. Table 8 lists all the relevant coins that await the attention of herpetological numismatists, summarizing all of our research on this topic. As things turn out, the grand total of herpetological coins and paper money is so large that a complete collection is impossible, even for persons with substantial financial resources. Accordingly, we encourage interested readers to specialize, perhaps by limiting themselves to

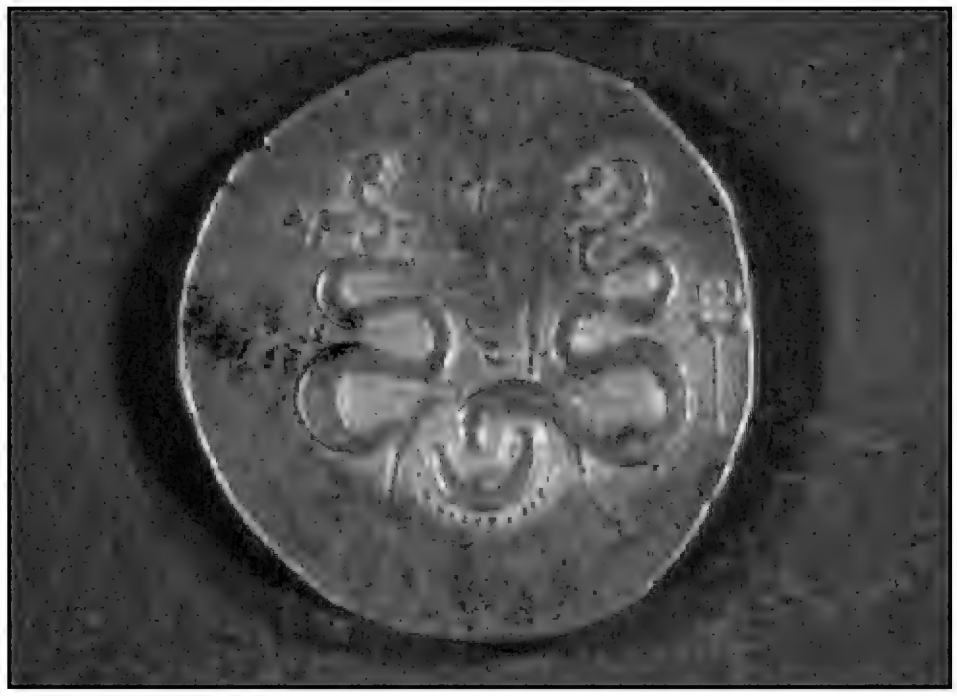


Figure 1. A silver cistophoric tetradrachm from ancient Greece (probably Mysia, Pergamum) minted after 133 BC (see coin 1533 in Table 2). The herpetological significance of the coin derives not only from the coiled serpents (mating?), but also from a caduceus-like object on the extreme right. The obverse of the coin contains a cista mystica (a basket used in celebration of the mystic rites of Dionysus; contained snakes) surrounded by a wreath. The cista mystica gave rise to the term cistophorus, which became the name of the most spectacular herpetological coin design of the ancient world.

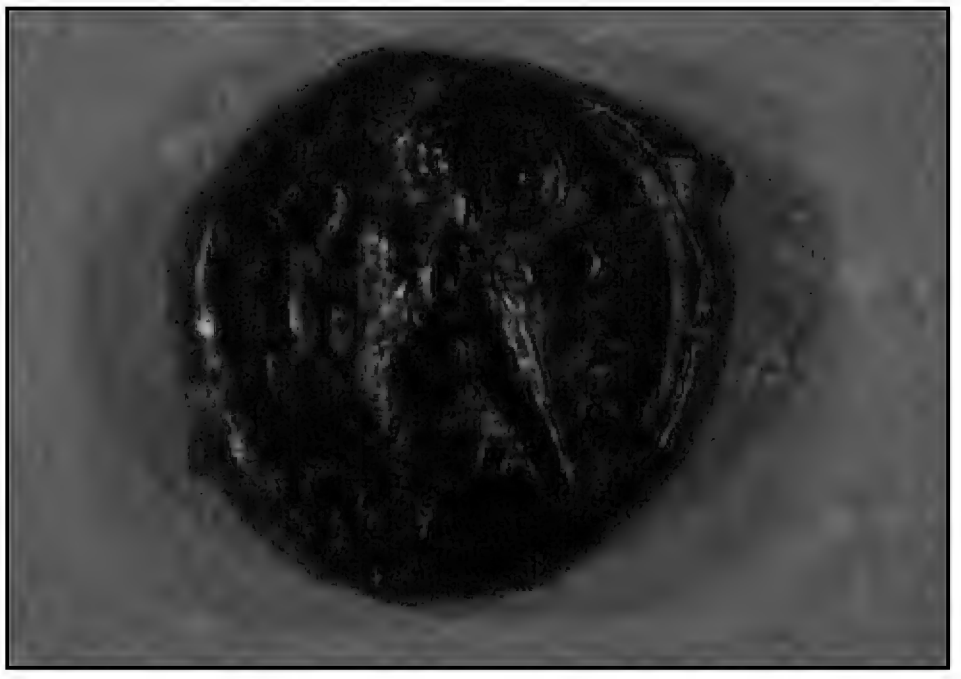


Figure 2. A copper/bronze coin from ancient Greece (Camarina, Sicily), minted between 413 and 405 BC (coin 355 in Table 2). The main device is an owl, but it holds a lizard in its dextral talon. The obverse features the head of Athena.

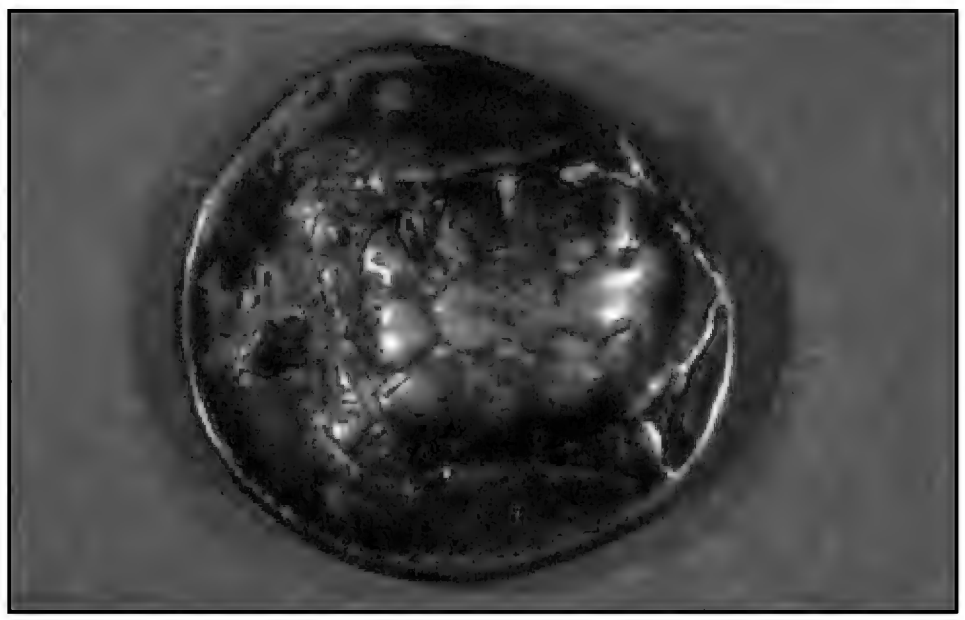


Figure 3. A turtle coin from Aegina, probably item 1060 in Table 1. Although smooth-shelled turtles were used exclusively on the early coinage of Aegina (Chiszar et al., 1996) segmented shells appeared between 445 and 404 BC, when Athenian colonists held Aegina. It seems likely that the change in turtle design was a propaganda device signaling the transition in administration of the island, with native Aeginetans having been replaced by Athenians.

Figure 4. Turning to Rome, we illustrate item 309 from Table 4, a denarius from 59–44 BC, featuring an elephant confronting a cobra standing to the elephant's right, directly underneath the tusk.

Figure 5. Another cistophoric tetradrachm occurs in the Roman Imperatorial series (39 BC, item 358 in Table 4). The obverse contains the heads of Mark Antony and Octavia. The snakes on the reverse surround a cista mystica which is surmounted by Bacchus.

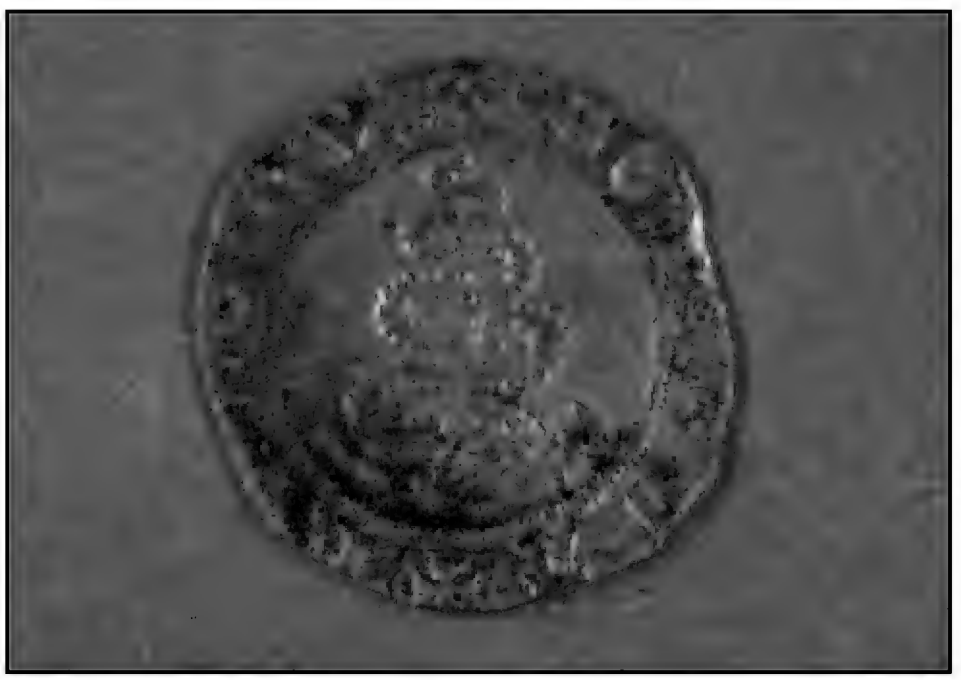


Figure 6. Advancing to Milan, Italy (1412–1447), we encountered numerous coins containing snakes on their reverses. This one is a silver sesino. The main device on the obverse is a cross.

particular countries or to particular periods of time. It is also possible to focus only on particular types of herps or on coins made of particular metals. By drawing conceptual circumferences around a sufficiently narrow group of coins, it will become possible to build a complete collection, reflecting a unique intersection between the disciplines of numismatics and herpetology (Moran, 1998). As herpetological meetings continue to expand in size and content, we suspect that opportunities will arise to exhibit coin collections along with collections of herpetological art and handcrafts, adding extra dimensions of enrichment and enjoyment to the exhibit areas and, perhaps, encouraging knowledgeable speakers to present scholarly talks about these materials as adjuncts to the ordinary scientific program.

References

Chiszar, D., W. Dunn and H. Smith 1997a. The relative absence of amphibians from ancient Greek coins. The Celator 11:10-15.

Chiszar, D., W. Rosenblum and H. M. Smith. 1996. Herp one: The earliest coins and notes to feature herpetological motifs. Bull. Chicago Herp. Soc. 31(10):181-186.

Chiszar, D., and H. M. Smith. 1996. A checklist of modern coins (1801–present) featuring herpetozoa. Part 1. Bull. Chicago Herp. Soc. 31(5):77-95.

Chiszar, D., and H. M. Smith. 1997. Numismatic herpetology: Paper money. Bull. Chicago Herp. Soc. 32(3):45-67.

Chiszar, D., F. van Breukelen and H. M. Smith. 1997b. Russian herpetological coins: A study in the meaning of dragons. Bull. Chicago Herp. Soc. 32(7):147-150.

Friedlander, W. J. 1992. The golden wand of medicine: A history of the caduceus symbol in medicine. New York: Greenwood Press.

Grierson, P. 1968. Catalogue of the Byzantine coins in the Dumbarton Oaks collection and in the Whittemore collection. Vol. 2: Phocas to Theodosius, 602–717. Part 1 (602–641). Cambridge, MA: Harvard University Press.

———. 1979. Later medieval numismatics (11th – 16th centuries): Selected studies. London: Variorum Reprints.

Krause, C. L., and C. Mishler. 1993. Standard catalog of world coins, 1701–1800. Iola, WI: Krause Publications.

Krause, C. L., and C. Mishler. 1996. Standard catalog of world coins, 1601–1700. Iola, WI: Krause Publications.

Moran, T. M. 1998. Spending some time on money. Reptile Hobbyist, July:88-90.

Seaby, H. A. 1975. Greek coins and their values. London: Seaby, Audley House.

Seaby, H. A., and P. Seaby. 1976. Coins of England and the United Kingdom. London: Seaby, Audley House.

Sear, D. R. 1974. Roman coins and their values. London: Seaby, Audley House.

———. 1987. Byzantine coins and their values. London: Seaby.

Sheehan, T. W. 1992. Wolsey's groat. The Numismatist 105:1238-1240, 1315-1317.

Sutherland, C. H. V. 1973. English coinage, 600–1900. London: B.T. Batsford Ltd.

Addendum

Dr. C. K. Dodd, Jr., brought several pieces to our attention (Madagascar and Australia), which we add to the list of recent herpetological notes and coins (Chiszar and Smith, 1996, 1997). The items from China and Nepal were discovered by us at a recent coin show.

Paper Money

Issuing Country	Pick #	Date	Animal Pictured	Denomination	Value (US$)
China	J56	1938	dragon	1 yuan	22.50
Madagascar	75	1993	radiated tortoise	500 aviary (2500 francs)	40.00
Nepal	3	1951	snakes	10 mohru	45.00

Coin

Issuing Country	Krause and Mishler #	Date	Animal Pictured	Denomination	Value (US$)
Australia	116	1989	frilled lizard	200 dollars, gold	175.00–225.00

Bull. Chicago Herp. Soc. 34(1):14-15, 1999

Book Review: *A Photographic Guide to Snakes and Other Reptiles of Peninsular Malaysia, Singapore and Thailand* by Merle J. Cox, Peter Paul van Dijk, Jarujin Nabhitabhata and Kumthorn Thirakhupt. 1998. New Holland Publishers, London. Ralph Curtis Publishing, Sanibel Island, FL 33957. ISBN 0-88359-043-0. 144 pp. Paperback. $15.95.

John C. Murphy
Division of Amphibians and Reptiles
Field Museum of Natural History
Chicago, IL 60605

You can never have too many field guides for regional herpetofaunas. This little (9.5 × 19 cm) volume is a high quality production on glossy paper and covered with a stiff wrapper. Thus, it can be easily carried into the field and it should resist some abuse. Although, I doubt it will hold up in a Southeast Asia monsoon. Anyone with an interest in Southeast Asian reptiles will want this volume for its outstanding photographs and excellent species accounts. This is an excellent buy considering the price and the quantity and quality of the photographs. Additionally, it covers a geographical region that lacks reptile field guides.

The introductory material includes sections on reptile habitats, locating and identification of reptiles, conservation, and snakebite first-aid. This is followed with 222 species accounts (120 species of snakes, 72 lizards, 3 crocodilians, and 26 turtles) for the "common, large, conspicuous, dangerous or biologically significant species." Unfortunately, this comprises only about two-thirds of the species known from the area. The 290 color photographs are the most spectacular feature, and probably the reason most of you will want this book: some species are illustrated with adult and juvenile representatives; some male lizards are shown in breeding coloration. There are three photos of the gecko *Cosymbotus platyurus* showing color and pattern variations, and a photo of the gliding lizard *Draco maculatus* showing its cryptic coloration on tree bark. The long-nosed whip snake, *Ahaetulla nasuta*, is illustrated in a close-up profile, and stretched out in the canopy of tree eating a bird. Thus, the illustrations make this book particularly valuable.

The advice given in the snakebite first-aid section focuses on using a low-pressure, wide area wrap to slow the spread of venom through the body. It should be pointed out that this first-aid measure is widely accepted for elapid bites, but is very controversial for pit-viper bites. Since both types of snakes are found within the area under discussion, a word about the controversy may have been appropriate.

Now that I have hopefully convinced you that this is a valuable book to buy, I would like to comment on an aspect of the book that I find annoying. In fact it is more than annoying; it is scientifically irresponsible, and counterproductive to the conservation of reptiles. On page 10 the authors correctly identify the major threat to the herpetofauna: "Yet the greatest cause of declining reptile populations is the loss of natural habitats as ever more land is settled and cultivated." On page 4 they write, "It will be obvious that little information exists about the natural history of many species. Indeed, anyone can make new discoveries with relatively little effort, whether these are new distribution records, observations on habitat selection, feeding, reproduction, or behaviour." Again, a statement I completely agree with. So if these statements are both correct, why do the authors make the following statement on page 8? "We strongly discourage collecting and preserving live specimens. Not only is this illegal in many places, but it often serves little purpose. This book provides all relevant data to identify an animal; proper photographs provide sufficient confirmation in most cases." Exactly how do they think all of the data on body size, clutch and litter size, gestation and incubation periods was collected? This kind of information was clearly not discovered through photography, or by following specimens around in the field. How do they think cryptic species were discovered? Again, not by taking photographs that were examined by experts.

Collecting specimens is critically important to supporting field observations. This book covers only two-thirds of the reptile taxa in the region, so it could not possibly contain all "relevant data" for identification, and while photographs are useful, specimens are better, and in fact are a necessity; and specimens do not serve "little purpose." They serve a major purpose. Verification is a dominant theme in scientific methodology. Identification of many taxa is not easily accomplished. Southeast Asian green pit vipers of the genus *Trimeresurus* are a case in point, and one of some concern considering these snakes are of medical importance. Four of these species are discussed on pages 20-21, and the authors write, "The Bamboo Pit-viper is externally identical to Pope's Pit-viper, but its hemipenis has a fundamentally different structure." Clearly, identification of these two snakes is not easily accomplished. Furthermore, there are undescribed taxa in this group crawling around in the shrubs of Southeast Asia, and collecting specimens is the only way they are going to be sorted out (see Malhotra and Thorpe, 1997). And, certainly there are certainly many more new species and genera of reptiles remaining to be discovered in Southeast Asia (and elsewhere on the planet), making collections very important.

Placing a moratorium on collecting reptiles assumes we possess all of the knowledge we need, it plays into the hands of developers, because it says we don't need to know anything else about the fauna of this habitat, you can destroy it! If you don't know a population represents a unique species how can you protect it, or why would you protect it, if you believe it represents a widespread, common species?

Scientific collecting is vitally important to improving knowledge and conserving gene pools. In the area of herpetology, much of the collecting has been done not by the few

professional herpetologists, but by many interested amateurs who understand its importance. Sending mixed messages to the general public is particularly damaging in this type of publication, because it is educating future herpetologists, both professional and amateur. (For further discussion on this see Murphy [1991].)

Literature Cited

Malhotra, A., and R. S. Thorpe. 1997. New perspectives on the evolution of South-east Asian pitvipers (genus *Trimeresurus*) from molecular studies. Pp. 115-128. *In*: R. S. Thorpe, W. Wüster and A. Malhotra, editors, Venomous snakes: Ecology, evolution and snakebite. Oxford University Press/Clarendon Press for the Zoological Society of London. Symp. Zool. Soc. London 70.

Murphy, J. C. 1991. Additional thoughts on collecting amphibians and reptiles, animal rights philosophy, and the relationships between humans and other species. Bull. Chicago Herp. Soc. 26(4):70-86.

Unofficial Minutes of the CHS Board Meeting, December 18, 1998

The meeting was called to order at 8:45 P.M. Board members Jennie Picciola, Jack Schoenfelder and Audrey Vanderlinden were absent.

Officers' and Committee Reports

The minutes of the November Board of Directors meeting were read and accepted.

The Treasurer's report was read and accepted.

Membership: Current membership is 980.

President: There is a signed agreement with the North Park Nature Center to hold board meetings through 1999. Steve reported that he and Audrey discussed the transferal of the presidency over dinner and that Audrey has good new ideas for the society. The Chicago Academy of Sciences was discussed as a possible site for the monthly meetings. A lot will depend on the parking situation and finances. It was strongly recommended that a scouting group visit the Academy to look it over and meet with their representative.

ReptileFest: Lori King-Nava reported that the contract for ReptileFest with Northeastern has yet to be signed. Construction at the university has fallen behind but should not be a problem. A raffle was suggested for ReptileFest's set-up and breakdown crews.

Old Business

The CHS was not able to participate in the Chances for Children Christmas party.

Jan Spitzer will continue to update the CHS phone message.

New Business

Mike Dloogatch brought in a letter to the membership from Lisa Koester with regard to the CHS *Bulletin* and possible changes which could be made. It was discussed briefly and no decisions were made.

Gary Fogel reminded everyone that Chicago will be hosting the 2001 Midwest Herpetological Symposium and that plans should be made in 1999 as to where it should be held.

Round Table

Ron Humbert expressed that he was very pleased to have been Sergeant-at-Arms for 1998.

Dottie Humbert reminded Mike Dloogatch about an old computer which he had stored under her stairs.

Gino Martinez reported that he has changed jobs. His only regret is that the super inexpensive printing processes would no longer be available to the CHS, but promised to shop around for the best possible deal. Steve Spitzer expressed complete confidence in Gino's intuition.

Gary Kostka thanked Steve for two years of quality leadership.

The meeting adjourned at 9:48 P.M.

Respectfully submitted for the Recording Secretary by Karen Bielski

Herpetology 1999

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

INDIAN OCEAN GIANT TORTOISES

J. Gerlach and L. Canning [1998, Chelonian Cons. and Biol. 3(1):3-19] report that the genus *Dipsochelys* comprises giant tortoises from Aldabra, Seychelles and Madagascar. This paper reviews the taxonomy of the genus, recognizing and redescribing six species: *D. dussumieri* (Aldabra), *D. daudinii* (Seychelles?), *D. hololissa*, (Seychelles), *D. arnoldi* (Seychelles), *D. abrupta* (Madagascar), and *D. grandidieri* (Madagascar). The species are reliably distinguished by their osteology, their external features being variable. The nomenclature of the Aldabran species is confused; this paper recommends a strict application of the rules of nomenclature and the resurrection of *D. dussumieri* (Gray, 1831) in preference to the invalid *Geochelone gigantea* (Schweigger, 1812) or the junior synonym *D. elephantina* (Duméril and Bibron, 1835). Phylogenetic relationships supported by a cladistic analysis of osteological features suggest that the Malagasy species share a common ancestry with two of the Seychelles forms (*D. arnoldi* and *D. hololissa*), with the Aldabran *D. dussumieri* and the presumed Seychelles species *D. daudinii* forming a separate clade. This may support suggestions that the Aldabran population is descended from an undescribed extinct population from the Comoros rather than from Madagascar. Of the six species redescribed only three remain extant (*D. dussumieri*, *D. hololissa* and *D. arnoldi*).

WOOD TURTLES IN QUEBEC

R. A. Saumure and J. R. Bider [1998, Chelonian Cons. and Biol. 3(1):37-45] investigated the effects of agricultural development on wood turtles (*Clemmys insculpta*) in Quebec during 1994 and 1995. Age structure, growth, and mutilation rates were compared between an agricultural population and a reference site in an undisturbed forest. Turtles in the 0–4 year age class were absent from samples taken at the agricultural site. Overall, 23% fewer juveniles were encountered at the agricultural site. In addition, relatively fewer adults from the 20+ age class were captured. Shell injuries were twice as common at the agricultural site when compared to the forest site, whereas limb amputations were twice as frequent at the forest site. Although shell injuries inflicted by predators occurred with similar frequencies at both sites, there were 2.7 times more fractures resulting from anthropogenic sources at the agricultural site. Multiple limb loss occurred only at the forest site. Tail amputations occurred with similar frequencies at both sites. Casts of costal scute annuli revealed that turtles at the agricultural site had significantly lower growth rates during their second decade of life. Females at the forest site were significantly larger for all measurements recorded, whereas males differed only with respect to carapace and plastron lengths. Agricultural development may have resulted in reduced predation, but also in reduced growth and recruitment, as well as increased adult mortality.

REVISION OF THE GECKO GENUS *EBENAVIA*

R. A. Nussbaum and C. J. Raxworthy [1998, Herpetologica 54(1):18-34] rediagnose the gecko genus *Ebenavia* Boettger as phyllodactyle gekkonines with mostly multicarinate scales and claws restricted to the digits of the pes of females. They describe *Ebenavia maintimainty*, a second, diminutive species of *Ebenavia* from Lac Tsimanampetsotsa on the southwestern coast of Madagascar. This new species differs from the type species, *E. inunguis*, in its smaller size, darker and more uniform coloration, presence of multicarinate postrostral scales, and a relatively larger and differently shaped first supralabial scale. The phylogenetic affinities of *Ebenavia* are unknown, but the two species share similarities with *Phyllodactylus peringueyi* of South Africa, and the possibility that the three species form a monophyletic group should be explored. The discovery of this new species adds to the growing list of Madagascan species-pairs that have east–west disjunctions, with western species adapted to xeric conditions and eastern species found in rainforest.

TREE BOA HABITAT USE

R. W. Henderson et al. [1998, Amphibia–Reptilia 19(2): 203-214] studied habitat utilization by the arboreal boid *Corallus grenadensis* at two ecologically disparate sites on the West Indian island of Grenada: one devoted largely to agriculture, the other largely devoid of agricultural activity. Small snakes (< 600 mm SVL) were most often encountered in uncultivated scrub woodland at both sites; large snakes (>1100 mm SVL) were encountered most often in fruit trees at one site and in mangroves at the other. Snakes of medium size (600–1100 mm SVL) occurred in both kinds of habitat. These size classes correspond to an ontogenetic shift in diet (lizards to mammals), and this is associated with a corresponding shift in habitat utilization.

PHILIPPINE TURTLE DISTRIBUTION

M. Gaulke and U. Fritz [1998, Herpetozoa 11(1/2):3-12] report that at present five taxa of batagurid turtles are known to occur in the Philippines (*Cuora amboinensis amboinensis*, *C. amboinensis kamaroma*, *Cyclemys dentata*, *Heosemys leytensis*, *H. spinosa*). Only one of them, *Cuora amboinensis amboinensis*, occupies a wide range there, whereas the others are restricted to a few islands. Two different migratory routes were used for colonizing the Philippines: *Cuora amboinensis kamaroma*, *Cyclemys dentata* and *Heosemys spinosa* reached the islands from Borneo. *Cuora amboinensis amboinensis* colonized the Philippine Archipelago either from Sulawesi or from the Moluccas, a region that otherwise has only slight herpetofaunistic affinities with the Philippines. The extremely rare *Heosemys leytensis* is the sole chelonian species endemic to the Philippines. Its phylogenetic and zoogeographic relationships are poorly understood.

HABITAT RELATIONSHIPS IN CALIFORNIA OAK WOODLANDS

W. M. Block and M. L. Morrison [1998, J. Herpetology 32(1):51-60] used pitfall traps and time-constrained searches to sample amphibians and reptiles and to describe their habitats in oak woodlands at three areas in California. They captured 766 individuals representing 15 species during pitfall trapping and 333 animals representing 15 species during the time-constrained searches. A total of 19 species were sampled. Across all study areas, several positive relationships were found between animal abundance and the cover of specific tree species. At Tejon Ranch, two salamanders—*Batrachoseps nigriventris* and *Ensatina eschscholtzii croceater*—were associated with canyon live oak (*Quercus chrysolepis*) and two lizards—*Sceloporus occidentalis* and *Eumeces gilberti*—were associated with California black oak (*Q. kelloggii*). At San Joaquin, *B. nigriventris* was associated with foothill pine (*Pinus sabiniana*), as was *B. attenuatus* at Sierra Foothill. Generally, salamanders were found in live oak woodlands on north-facing slopes at Tejon Ranch, or on north-facing woodlands dominated by foothill pine and interior live oak (*Q. wislizenii*) at Sierra Foothill and San Joaquin. In contrast, lizards used more xeric and open habitats dominated by California black oak, blue oak (*Q. douglasii*), and valley oak (*Q. lobata*). As would be expected for terrestrial and fossorial animals, litter depth, the development of grasses and forbs, and cover by downed woody debris and rocks were important in the habitat models. At Sierra Foothill and San Joaquin, these latter variables, in addition to slope, were of primary importance in the habitat models.

HYBRIDS BETWEEN TRANSPLANTED JORDAN'S SALAMANDERS

R. Highton [1998, Herpetologica 54(2):143-153] reports that reciprocal transplantation of the southern Appalachian salamander *Plethodon jordani* between the Great Smoky Mountains and the Balsam Mountains, in field competition experiments by Nelson G. Hairston, Sr., in 1974–1978, provided an opportunity for observing the genetic interactions between the two populations in their first generation of sympatry. Native individuals in both mountain ranges can be identified by their coloration (red cheeks in the Great Smoky Mountain population, gray cheeks in the Balsam Mountain population) and F_1 hybrids can usually be identified by diagnostic alleles at four allozyme loci that have large frequency differences (>0.8) between the two populations. Based on electrophoretic comparisons of 22 protein loci, the Nei genetic distance between the two populations is 0.27. The frequency of F_1 hybrids in experimental plots in both mountain ranges was much less than expected from random mating of the two forms, indicating that either strong selection against hybrids or positive assortative mating (or both) occurred in the first generation of sympatry. This result might be expected between populations that are so divergent genetically. Twenty-three of the 32 individuals classified as F_1 hybrids possess an average of about half the amount of red on their cheeks as individuals of the pure Great Smoky Mountain *P. jordani*, but in nine individuals the red cheek pigment was absent.

ECOLOGY OF WHIPTAILS IN AMAZONIAN BRAZIL

L. J. Vitt et al. [1997, Copeia (4):745-757] compared microhabitat use, morphology, diets, and reproduction in three populations of *Cnemidophorus lemniscatus* (Alter do Chão, Curuá-Una and Roraima) and one population of *C. cryptus* (Rio Xingu) in the Amazon region of Brazil. *Cnemidophorus lemniscatus* were most common in grasslands or other open areas, but *C. cryptus* was restricted to sandy beach. A greater percentage of *C. cryptus* than *C. lemniscatus* was observed foraging. Morphologically, *C. lemniscatus* populations were identical. Females of *C. cryptus* (all-female species) were larger than females of *C. lemniscatus*. Based on numerical occurrence of prey, diets of *C. lemniscatus* from Alter do Chão and Curuá-Una were more specialized than those for *C. lemniscatus* from Lavrado or *C. cryptus* from the Rio Xingu. Based on volumetric occurrence of prey, *C. leinniscatus* from Alter do Chão were most specialized, feeding primarily on fruits of one plant species. Also based on volumetric data, diet of *C. lemniscatus* from Curuá-Una was most similar to that of *C. cryptus*. Lizards from Alter do Chão and Curuá-Una ate larger prey than did those from the other two sites. Concordantly, lizards in these two populations ate fewer prey. Clutch size was 1–4 eggs in *C. lemniscatus* and 1–2 eggs in *C. cryptus*, and there was a significant relationship between female size and clutch size. Ecological variation exists among populations of Amazonian *Cnemidophorus*. Overall, there were no ecological differences that could not be explained simply on the basis of habitat or resource differences among localities.

REPRODUCTION IN CANADIAN SPOTTED TURTLES

J. D. Litzgus and R. J. Brooks [1998, J. Herpetology 32(2): 252-259] studied reproduction in spotted turtles, *Clemmys guttata*, in Georgian Bay, Ontario, from 1992 to 1995 using mark–recapture, radiotelemetry and X-ray photography. The nesting season occurred in mid to late June and lasted approximately 2 wk. Oviposition was primarily nocturnal and required up to 8 hr to complete. All 11 observed nests were placed in shallow soil on exposed Precambrian Shield rock outcrops. Over 4 yr, an average of 58% of 109 females captured in June were gravid. No turtle laid more than one clutch per year, most females did not oviposit every year, and some (16%) did not produce eggs in three consecutive years. There was a positive relationship between female body size and nesting frequency. Mean clutch size, determined from X-rays and direct counting of oviposited eggs was 5.3 eggs. As predicted from optimal egg size theory, clutch size was positively correlated with female body size, whereas egg size was independent of female body size. However, correlations adjusted for body size indicated no trade-offs between clutch size and egg mass, length, or width. Compared to data from a more southern population in Pennsylvania, Georgian Bay spotted turtles had a larger mean clutch size and relatively smaller eggs. Most of the variation in reproductive output between the two populations was from differences in clutch size, not egg size. Northern spotted turtles are similar to other northern species of turtles in having more delayed maturation, larger body and clutch size, and eggs that are relatively (to body size) smaller than those in more southern populations.

OBSERVATIONS ON CAECILIANS

D. Hofer [1998, Herpetozoa 11(1/2):37-46] reports on observations from 20 years of amateur research on caecilians in their natural environments and in captivity. On La Digue (Republic of Seychelles), subadult *Hypogeophis rostratus* were easily found, living in colonies in vegetable mold near brooks. Migration to the breeding site on the island of Curieuse is supposed to begin in August or September after the end of the dry season. There is evidence that there is no brood care and that mating takes place other than where the eggs are laid. Young hatchlings measured about 4 cm. In Ecuador, *Siphonops annulatus* was found on the rain forest floor among leaf litter early in the morning after rainfall. *Typhlonectes compressicaudus* is sometimes caught by natives when fishing with a line. *Ichthyophis* habitats in Malaysia were strikingly similar to *Hypogeophis* habitats in the Seychelles. On São Tomé Island, *Schistometopum thomense* lives in colonies, preferring the substrate of decaying trunks in the higher regions of the island. Young are born without gills and clefts and measured 11–12 cm. This species seems to have powerful skin poison; *Feylinia polylepis* specimens kept with them died within three days. *Schistometopum thomense* displays a curious behavior in that it sticks its head out of the soil for up to 20 minutes. The same behavior is shown by *Typhlonectes anguillaformis*. *Siphonops annulatus* and *H. rostratus* were observed to slightly change their body color. The author maintains that most caecilians are easy to keep; among the species caged in terraria only *S. annulatus* required a heated environment.

RIVER COOTERS IN ILLINOIS

M. J. Dreslik [1997, Herpetological Natural History 5(2): 135-145] notes that in Illinois the river cooter, *Pseudemys concinna*, is a poorly studied endangered species. During 1994-1996, he quantified growth, population size and structure, and diet of a population from a floodplain lake in Gallatin County, Illinois. For males and females, growth slowed between 8–15 and 13–24 years, respectively. Comparisons between male and female curves revealed that growth parameters and proportional growth toward the asymptote were not significantly different, while asymptotes differed significantly. Differences of scute ring- and Sexton-aged individuals from von Bertalanffy model estimates were not significant through age five for males and six for females. The author estimated that 153, 157 and 235 individuals were found in the lake at densities of 5.1, 5.2 and 7.8 turtles/ha in 1994, 1995 and 1996, respectively. Associated biomass estimates were 3.84, 3.94 and 5.90 kg/ha, respectively. The overall sex ratio was female-biased, whereas the adult sex ratio was male-biased; neither ratio differed significantly from 1:1.

COMMON NAMES FOR THE AMPHIBIANS OF INDIA

I. Das and S. K. Dutta [1998, Hamadryad 23(1):63-68] present a checklist of the amphibians of India, along with recommended English common names. Dubois' (1992) scheme of classification is followed for members of the family Ranidae. The fauna as presented includes 210 species in nine families.

CHAMELEONS IN GREECE

W. Böhme et al. [1998, Herpetozoa 11(1/2):87-91] report that the only known chameleon population in mainland Greece (SW Pelopónnesos) does not belong to the European species *Chamaeleo chamaeleon* (Linnaeus, 1758) but to the African *C. africanus* Laurenti, 1768, species complex. The exact taxonomic position of this Greek population within the complex is still to be determined; the individuals differ, however, from African subsaharan representatives by their much larger size and different range of color variability. Most likely, the presence of *C. africanus* in Greece is due to passive human transport sometime in antiquity; since then it has established itself as a second European chameleon species, although unknown to science until now. The only European location where it is known to occur is seriously threatened by tourism. Therefore, the authors recommend that *C. africanus* should immediately be placed on the official list of protected animal species of Greece, and of the European Union.

CALABARIA HUSBANDRY

G. Hortenbach and H. Hortenbach [1998, Salamandra 34(2): 157-166] report on the husbandry, behavior and reproduction of a pair of *Calabaria reinhardtii*. After some vain attempts at captive breeding since 1990 using different methods of stimulation, the authors were successful in 1995–1996. They attribute their first captive breeding to stimulation with multiple offers of prey. The food intake of the female in two months was 3.17 times its own mass. The same method of stimulation resulted in another captive breeding in 1996–1997. Both clutches were composed of three eggs measuring 95–115 × 3O–35 mm. Their mass was 65–75 g. Pregnancy lasted 111 and 114 days respectively. The incubation times were 34 and 41 days respectively at 31°C and a relative humidity of 80–95%. The first clutch yielded two hatchlings, the second clutch three. Hatchling length ranged from 26.3 to 32.0 cm and mass from 18 to 40 g. Rearing the juveniles did not cause any problems. [Article in German]

URTD IN FLORIDA AND MISSISSIPPI TORTOISES

R. B. Smith et al. [1998, J. Herpetology 32(3):426-430] studied the occurrence of exposure to Upper Respiratory Tract Disease (URTD) in gopher tortoises (*Gopherus polyphemus*) at protected sites in southern Mississippi (Marion County Wildlife Management Area [MCWMA]) and east-central Florida (Kennedy Space Center [KSC]). Based on antibody assays, exposure to URTD was very common in both populations, with combined positive and suspect results ranging from 60% (KSC) to 100% (MCWMA). At KSC, males were significantly more likely to show positive or suspect results than were females. Tortoises with active signs of URTD were seen at KSC but not at MCWMA. Data from this study do not support the hypothesis that exposure to URTD is associated with human disturbance or habitat destruction; several sites that had good habitat conditions and little disturbance by humans had high rates of URTD, whereas some sites with high levels of disturbance had low rates of URTD. Long-term monitoring of populations with positive antibody test results is needed.

TOXICITY OF CANE TOAD TADPOLES

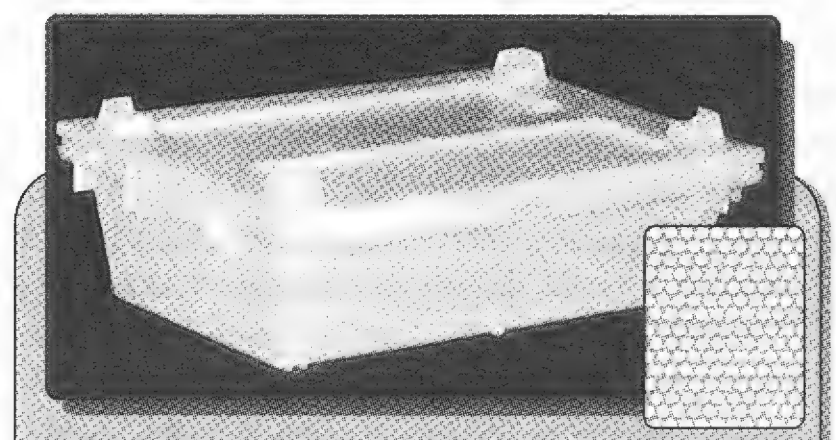
M. R. Crossland [1998, Herpetologica 54(3):364-369] investigated ontogenetic variation in toxicity of tadpoles of the introduced cane toad (*Bufo marinus*) to three species of native Australian aquatic invertebrate predators. Crayfish (*Cherax quadricarinatus*) and dytiscid beetles (*Hydaticus vittatus*) consumed early, mid, and late developmental stages of larval *Bufo* without apparent ill effect. Belostomatids (*Lethocerus insulanus*) also preyed upon early developmental stages of *Bufo* without apparent ill effect, but they experienced significant mortality after preying upon mid and late developmental stages of these tadpoles. There was intraspecific variation in the toxic effects of mid and late developmental stages of tadpoles on *L. insulanus*; consumption of these stages was fatal to some individuals but not to others. The observed inter- and intraspecific variation in toxicity was not related to the number of tadpoles consumed. Such variability may reflect variation in toxicity among individual tadpoles, or variation in susceptibility to toxins of *Bufo* within and among predatory species. The results demonstrate that the toxicity of larval *B. marinus* increases ontogenetically. However, not all native aquatic invertebrate predators are adversely affected by this increase in toxicity.

LOGGING AND THE PEAKS OF OTTER SALAMANDER

P. Sattler and N. Reichenbach [1998, J. Herpetology 32(3): 399-404] determined the effects of two types of timbering on populations of the Peaks of Otter salamander (*Plethodon hubrichti*) using average numbers found during multiple night collections. Sampling was done prior to, and for two years after, timbering on four sites in each of three treatments (clearcut, shelterwood cuts, and reference). The average numbers of *P. hubrichti* at the reference and shelterwood cut sites were stable over time while those at the clearcut sites showed a significant decrease post-timbering. Two years after timbering, 30% of the pre-timbering populations remained at the clearcut sites. Jolly–Seber population estimates on one clearcut site decreased from 43 to eight animals after cutting. In contrast, one reference site had a population estimate that oscillated around a mean of 71. Of the animals marked before timbering, significantly fewer were recaptured after timbering at the clearcut site (17.5%) relative to the reference site (39.0%). Juveniles appeared to be the size class affected to the greatest degree. Adults and juveniles on clearcuts most likely emigrated and/or died after treatment.

Health Food for your herps!

Highest quality rodents are available in all sizes from pink mice to jumbo rats. Fresh frozen crawler mice are only 17¢ each in lots of 2,000. All frozen animals are shipped in insulated boxes.



Nearly 9,000 holes and they still can't escape!

The new TTC is ideal for transporting, breeding and storing your mice, rats, snakes and lizards. The strong plastic TTC has over 2,200 holes on each side and over 4,500 holes on the lid to provide maximum air circulation even when stacked. Each TTC can be divided into 2, 3 or 4 compartments and its smooth plastic construction makes washing a snap.

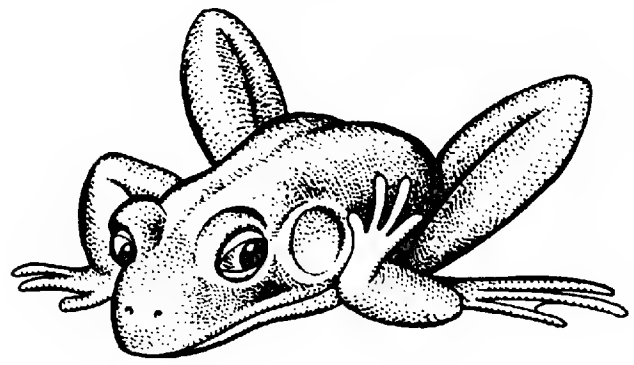
SAS

273 Hover Avenue • Germantown, NY 12526-5320
518-537-2000 • Fax 518-537-7287

Bull. Chicago Herp. Soc. 34(1):20-21, 1999

The Tympanum

Dear Members:



Hello and welcome to another year at the CHS. My name is Audrey Vanderlinden and I am your 1999 President. A lot of members do not know who I am, and as a start to the new year, I wanted to write a few lines to rectify that.

I have been involved in herpetoculture for many years, both as a hobbyist and breeder and have been an active member on the Board of Directors of the CHS for several years. My herpetological area of expertise is uromastyx lizards as well as other desert species and I have been successfully breeding *Uromastyx ocellatus ornatus* for several years.

I have been responsible in the past for such activities such as field trips and picnics and I have served on several committees for show events such as ReptileFest and other public-oriented expos presented by the CHS. I plan to continue with these events plus add a few more fun and exciting activities for 1999.

My goal and keyword for 1999 is **interaction**! As a well rounded group of individuals that meet once a month, I feel there is a plethora of information among us that needs to be shared. It has seemed in the past that members often find it difficult to get questions answered, be it about husbandry or when the next board meeting is. My goal for the entire membership is to open the doors of communication among us by means of more interaction.

We, as an entire society are also members of other herp societies that we trade monthly newsletters and bulletins with. These items have rarely been available for the general membership to view. I have spoken with other society presidents and what they have done at general meetings was lay out the bulletins from the fellow societies for their members to read at intermission or before a meeting starts. For the CHS, we will now have these available to read at our Membership table in the lobby. Maybe we'll get an idea from some other group's activities.

As well as field trips and picnics, I will also bring back the herp classrooms, such as the parasitology class that took place a couple of years ago at the Grove in Glenview. If there is a member among us who has a particular field of expertise that may want to conduct a class, for example, on cage building, please let me know and let's see if it's do-able!

In the future, at all general meetings, we will conduct an informal question-and-answer forum, lasting around 15 minutes or so, to get some interaction going among us. Any subject on herpetology is allowable and this will generate some socialization among us and especially for the newcomers. As a newcomer to the CHS many years ago, I found it difficult to find people to get questions answered, because I had little guidance as to the "who's who" in the group. My friends and fellow members, that will all change in the future. Remember, this is your society, fellow kindred spirits and you have a voice in what you'd like to see happen. I will listen. You will count.

Lastly, I would like to remind everyone that the CHS Board of Directors meetings are open to anyone wishing to attend and learn about what goes on behind the scenes of a successful herpetological society. The dates are listed in the calendar inserted in this *Bulletin*. They are either the second or third Friday evening of each month at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago (near Bryn Mawr and Pulaski). Everyone is welcome and encouraged to attend. Our general meetings are, of course, the last Wednesday of each month at the Field Museum in Chicago.

Interaction and the CHS!! A wonderful concept!

Sincerely, Your President, **Audrey A. Vanderlinden**.

Welcome to 1999 and your new CHS *Bulletin*!

My name is Lisa Koester and I'm your new Publications Secretary. Mike Dloogatch has moved onto bigger and better things; specifically, Vice-president. Congratulations, Mike! Happily, for everyone involved, Mike has agreed to stay on as *Bulletin* Editor. Ralph Shepstone is staying on as Advertising Manager. We have lost Gary Kostka and his great meeting reports. Thanks for a wonderful year of coverage! Everyone will miss you.

When I was approached by the CHS Nominating Committee they asked me to come up with some ideas regarding the *Bulletin* and where I'd be taking it. Well, my little wheels whirred and I came up with a few! That's the good news. The bad news is that it involves everyone. Young. Old. In between. Let me bounce some of them off you, and we'll see how they fly.

Please keep in mind that the ultimate success of the *Bulletin* depends on you! Now, I am speaking to every member out there. Submissions need not be technical, have references or citations. Just friendly input.

1. General Meeting report

Purpose: To bring the spirit of the meeting to everyone unable to attend.

Entails: As many or few roving reporters as want to participate. There is no wrong way to gather info for a meeting review! You could tell us about the neat books and items for sale. The new books in at the Library. What was raffled off. What the speaker covered—with as much or as little detail as you like. It would be a great time to find a willing member and get a brief bio. . . . Who they are. What they're interested in (both herp and nonherp). What they currently have, dream about having, never want to have again, . . . etc!

2. Overviews of what other publications are putting out

Purpose: Dissemination of printed information. You and I can't see every publication out there . . . but if we each do just a little of the legwork, we and our animals will all benefit in the end.

Entails: Anyone who has access to any herp publication simply need send in the title, volume information (date, issue or volume #) and a list of what is covered. This is a simple as a photocopy of the table of contents, a handwritten note, E-mail or telephone call. Woodworking magazines, outdoors mags and other nonherp magazines are just as important! Don't overlook these sources. Often times they contain related info off the beaten path that is just what the doctor ordered!

3. Nonprint information

Purpose: To alert members to nonprint materials out there.

Entails: A note, call, E-mail, or some communication containing: the media type (audio- or videotape, cd, cable or TV program, etc.) Where it was seen (video store, magazine, club publication). Purchase info (price, phone number or address) and anything else you think folks should know. If a broadcast program perhaps the name / title of the series, where seen and what was included (if not intuitively obvious from the title).

4. Anything Internet: Sites, lists, chat rooms, etc.

Purpose: To alert members to useful information they may not have yet come across.

Entails: Getting that info to me. E-mail would, it seems, be the easiest way. If you would like to send a description of what folks will find there, that would be fine. If not, that's fine too. Let them surf there. It will give them something to do.

5. Heavy-duty Articles

Purpose: To give your fellow members something interesting to read.

Entails: Major articles should have not been published in any other journal or printed form. They may be submitted on disk (PC-clone or Mac, doesn't matter). Manuscripts should be typewritten, double-spaced and submitted in duplicate. Please send these to: Chicago Herpetological Society, Publications Secretary, 2060 N. Clark Street, Chicago, IL 60614

6. Husbandry tips, ideas, questions or sources

Purpose: To share ideas, get a rapport going and hopefully make life easier.

Entails: Submitting the information.

7. A Regular Column: Wide open to ideas

Purpose: More stuff to read.

Entails: Someone needs to write and submit it. Easy as pie!

8. Member biographies

Purpose: To bring meaning and personalities to the names. (Maybe even make a new friend or two.) The society, to me, lacks cohesion and camaraderie. People sit by themselves at meetings because they don't know anyone and are uncomfortable walking up to a stranger and introducing themselves. Now, I'm assuming that's the reason. We're not antisocial people or we wouldn't be attending meetings.

Entails: Name tags with your interests listed on them. Just kidding! Gotcha! How about walking up to someone, introducing yourself and saying, "That Lisa, she must be outta her mind if she thinks those crazy *Bulletin* ideas are gonna fly." Then you can laugh and start a conversation. It's not that difficult. You'll see.

I have heard a lot of members, and I myself am one of them, state that the *Bulletin* is too technical. This is our opportunity to take the publication into our hands and mold it. Not a technical-article person? Neither am I. I would love to see more general husbandry information in the *Bulletin*, (perhaps we could use it as a way to review and revise the Care in Captivity sheets) and gobs of member input.

We have nearly 1,000 members . . . and a publication. Just think what we could do if we used it for communication and an open exchange of ideas, information and everything else under the sun. We'd be unstoppable and highly readable to all levels of husbandrists.

If you have an idea or just want to touch base you may mail it to the address listed in item #5. E-mail me at <rlkoester1@earthlink.net>. Or call me at (773) 508-0034 v/tty. I'm looking forward to giving you the best possible *Bulletin* I can. . . . You and your 1,000 brains and 2,000 eyes think and see a lot more than I and my one and four, respectively.

Included in this *Bulletin* are calendar pages listing CHS events, addresses and info. There are a couple of other things thrown in. Feedback is certainly welcome! If there are items you think would be beneficial on the calendar, please let me know. I was thinking that tips or facts would be fun . . . but I don't really have any. Do you?

Don't Feed Fireflies to Herps

Recent studies with lizards have demonstrated that ingestion of fireflies (or "lightning bugs," as they are sometimes called) can kill lizards and, thus, should be considered potentially toxic to all herps. Three cases have been documented. One inland bearded dragon (*Pogona vitticeps*) died within an hour of eating several fireflies. Another *P. vitticeps* died about two hours after eating a single firefly. A leopard chameleon (*Chamaeleo pardalis*) died shortly after eating a half-dozen fireflies.

Fireflies of the genus *Photinus* contain protective poisonous steroids called "lucibufagins" which are believed to be responsible for the deaths. Not all fireflies naturally contain these toxins, but others (*Photuris*) can acquire toxicity by feeding on *Photinus*. Thus, all fireflies should be avoided. Lucibufagins are related chemically to cardenolides which are potently cardiotonic and at very low dosages can cause death in mammals. These toxins are manufactured by a number of plants, including milkweed plants, on which many insects (such as certain lygaeid bugs, and monarch and queen butterflies) feed. Thus, it would be wise to exclude all such insects from the diets of lizards and other herps, pending further studies.

Additional information can be obtained from an article just submitted for publication by scientists at Cornell University, the National Animal Poison Control Center, and Trinity College. The manuscript can be viewed on the web: <http://www.bio.cornell.edu/neurobio/eisner/pogona.html>.
Kraig Adler, Neurobiology and Behavior, Seeley G. Mudd Hall, Cornell University, Ithaca, NY 14853-2702.
Phone: (607) 254-4392. E-mail: <kka4@cornell.edu>.

Media Notes

compiled by Lisa Koester

Are you an avid reader, net surfer or TV viewer? How about sharing some of what you run across with your fellow members? Read on. I think you'll like what you see. . . . It's a fun concept and it'll be easy for everyone to submit their favorites.

Magazines

Lizards:

Agamas, breeding of: *Reptiles*, February 1999, p. 78, by Ernie Wagner. Blurb+

Chameleons anyone? Check out the February 1999 *Reptiles*. It's their "Chameleon Guide." More chameleons than you can shake a stick at!

Iguanas: *National Geographic*, January 1999, p. 95. Photo of a sculpted image carved between A.D. 600 and 1000.

Snakes:

African Rock Pythons: *Reptiles*, February 1999, p. 6. Advice on what to do with the one you just bought. Blurb+

Anacondas: *National Geographic*, January 1999, p. 62. "Tracking the Anaconda," a report on the first research ever conducted on this reptile in the wild. Don't miss the pic of the photographer holding a 14-footer, two pages before the back cover (sorry, no page numbers that far along.)

Regurgitation: *Reptiles*, February 1999, p. 66. Article by renowned reptile veterinarian Doug Mader.

Turtles / Tortoises:

Green sea turtles: *National Geographic*, January 1999, p. 22. A two-page, two-picture blurb—showing underwater mating and skeletal remains on the floor of a cave under Sipadan Island. The article is called "Coral Eden."

Frogs:

Tree Frog Rescue. *Reptiles*, February 1999, p. 92. Discusses a trip to the vet and medicating the little guy. Blurb+

Books

The World's Most Spectacular Reptiles and Amphibians by William W. Lamar et al. $29.95. ISBN 1-884942-07-5. Hardcover, 208 pp., available from World Publications, P.O. Box 24339, Dept. R. Tampa, FL 33623, (813) 620-4517. Reviewed in the January 1999 *Reptiles*, p. 64. They really like it.

The Encyclopedia of Reptiles and Amphibians edited by Harold Cogger and Richard Zweifel. $34.95 ISBN 0-12-178560-2. Academic Press Sales Dept., Dept. R, 525 B Street, Suite 1900, San Diego, CA 92101-4495, (619) 231-0926. This is the second edition, and the reviewer liked it much more than the first.

Internet Sites

Snakes:

Sand Boas and Other Erycine Snakes
<www.wcc.net/~sandboa/eryx.html>

Crocodilians:

Bibliography of Crocodilian Biology
<http://itech.fgcu.edu/faculty/mmeers/bcb/bcb.html>

Crocodilian Internet Resources
<www.flmnh.ufl.edu/natsci/herpetology/brittoncrocs/cir.html>

Lizards:

Green Iguanas—Melissa Kaplan's Site
<www.sonic.net/~melissk/ig_care.html>

Turtles / Tortoises:

Hatchling Haven
<http://home.earthlink.net/~rednine/>

The Chicago Turtle Club
<www.geocities.com/~chicagoturtle>

Elmer, the Red-eared Slider
<www.geocities.com/Heartland/Woods/3410>

Frogs:

Frogs
<www.av.qnet.com/~jennie/index/htmj>

How to Care for Your Sick Froggy
<www.teleport.com/~dstroy/info/sick.html>

Frogland (fun site!)
<www.teleport.com/~dstroy/froglnd.shtml>

Miscellaneous:

Herp Societies and Reptile Vets (by locality)
<www.sonic.net/~melissk/society.html#societies>

Okay, folks. Are you ready to try your hands at this? Nothing complicated. Basically, it's just what and where. Can't make it any easier than that!

Please send your sightings to Lisa Koester, 6121 N. Fairfield Avenue, Chicago, IL 60659, (773) 508-0034, or E-mail: <rlkoester1@earthlink.net>.

I used book sightings from a magazine, but if you see a book in a store just jot down the author, title, price and publication date. It's nice if you can get an ISBN, but if not, the other info will do just fine.

If you have any suggestions or comments regarding this feature of the *Bulletin*, please, pass those along as well.

If we all chip in on this we can have dozens of herp and related publications at the tips of our fingers every month.

Advertisements

American Federation of Herpetoculturists: A nonprofit national membership organization of herpetoculturists, veterinarians, academicians and zoo personnel involved in the captive husbandry and propagation of amphibians and reptiles. Membership includes highly acclaimed magazine, *The Vivarium*, dedicated to dissemination of information on herpetocultural accomplishments, herp medicine, breeding and maintenance, field studies and adventures, enclosure design and much more. AFH membership is $26. Send information requests to: AFH-News, P.O. Box 300067, Escondido CA 92030-0067.

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail <GrmtRodent@aol.com>.

For sale: murine-pathogen-free rats and mice available in all sizes, live or frozen: pinkies, fuzzies, crawlers, small, medium and large. Frozen crawler mice in lots of 2000, $.17 each. Also available, full grown hairless mice. FOB shipping point. Master Card accepted. Call (518) 537-2000 between 8:00 A.M. and 5:00 P.M. or write SAS Corporation, 273 Hover Avenue, Germantown NY 12526 for prices and additional information.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice since 1989. Our mice are frozen separately and vacuum-packed to greatly extend freezer life by reducing freezer burning and preserving vitamin and nutrient content. We feed our colony a nutrtionally balanced diet of Mouse Chow and four types of natural whole grains and seeds. Prices: pinkies, $25/100; fuzzies, $30/100; weaned, $35/100. Quantity discounts available. Ray Queen, P.O. Box 85, Alpine TX 79831. Call (800) 720-0076 or E-mail us at <mousefac@overland.net>. Fax (915) 837-0156.

For sale: from Bayou Rodents, excellent quality feeder mice and rats. Every size available. Pinks starting at $20/100. Orders are shipped by overnight service Monday thru Thursday. We accept Visa, MasterCard and Discover. For more info, contact Rhonda or Peggy, (800) 722-6102.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice availabe: small newborn pinks up to jumbo adults. Prices start at $25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: Herp bags—colors vary, translucent ripcord nylon, super lightweight, extremely durable construction with hot corners sewn in, double seamed. Custom sizes made upon request. Sizes: 46" × 14", $7 each; 24" × 12", $6 each; 24" × 6", $5 each. Shipping fees, $1 for first bag, $.30 each additional bag. Nicole Lechowicz, 2511 S. Illinois Avenue, #104, Carbondale IL 62901, (618) 457-2783.

For sale: Reptile terrarium/aquarium, $250 or best offer. Oak aquarium stand with cabinets underneath. Will hold 2 adult iguanas. Handmade, orginal cost, $900. Vita-lite and heat lamps built in, heat rocks included, able to hold a 180–200 gallon aquarium on top. Dimensions: L-6 ft 2 in., W-2ft 1 in., H-4ft 1 in. Call Judy at (630) 724-0786 if interested.

For sale: Tortoises. Two 5-year-old Chaco (*chilensis chilensis*); one Amazon Basin yellow-foot tortoise; one 5" *sulcata*, 1.5 years old. Will ship and will only sell to good home. Best offer. Colin, (773) 784-4669. E-mail: <colintk@msn.com>

For sale: one male and one female Chinese water dragons with custom cage (48" × 30" × 36") and all accessories, $150. Dan, (847) 891-6778.

For sale: adult male rosy boa, San Felipe region, c.b. '95, $100; female Mexican milksnake, c.b. '97, $50; adult northern (*intermedia*) blue-tongue skink, uncertain sex, not tame, but very nice pattern, $100. Chicago area pick up only. Mark, (847) 570-0239.

For sale: Arboreal Ecstasies! Paul Edwards, breeder–broker, dealing exclusively with emerald tree boas, Amazon tree boas and chondropythons. Over 12 years experience keeping and breeding arboreal Boidae. Yellow baby Amazons available now. If you're looking for high quality specimens, please call me at (843) 766-2413. [SC]

For sale: **rare Honduran milksnakes**: Taking orders for ghost; snow; hypo-albino; all three kinds of double-mutations; albinos; tangerine albinos; hypos; tricolor hypos; anerythristics; others. Some already sold out for '99. Terry Dunham, Albino Tricolors, (727) 824-0705, before 10 P.M. EST please, or E-mail: <rtdunham@earthlink.net>. [FL]

For sale: beautiful, tricolor kingsnakes. Send SASE for **free** list. Also, free phone consultation on snake husbandry problems as a service to the herp community. Robert Applegate, P.O. Box 338, Campo CA 91906, (619) 478-5123. Thank you for your attention.

For sale: **Adults:** male het ghost, $60; black king, $55; male *thayeri* (milksnake phase), $100; pair of ball pythons, $175/pair; Indonesian bluetongue, $55; *Rhacodactylus auriculatus*, c.b. '98, $150; *Phelsuma madagascariensis grandis*, c.b. '98, $20. Flexwatt heat tape, $2.50/ft, $5 each connection. Steve Bostwick (515) 274-4580, E-mail <liasis@juno.com>. [IA]

For sale: single carpet pythons, c.b. 7/98, parents high-yellow and solid jet black, $200; 50/50 Cal. kings, $50; female Arizona mountain kingsnake, 2-year-old, outstanding color pattern, $175. Mark Petros, Strictly Serpents, (847) 854-3259.

For sale: one 6½–7' black-headed python, breeder, $3000; one male and one female black-headed pythons, 5½–6½', inquire; two female black blood pythons, proven breeders, lay 16–22 eggs, $250 each; one adult female ringed python, $400; two male and three female rough-scaled sand boas, proven breeders, beauties (some have pumpkin color dorsally), $150 each; eight young rough-scaled sand boas, take all, $45 each, or (with purchase of the above adults) take all, $20 each; one 5½' Brazilian rainbow boa, *hypomelanistic* as pictured in *Vivarium* Vol. 9, No. 2, "Cutting Edge," p. 41, inquire. Young tortoises: Hermann's, $150; Bell's hingeback (captive hatched, uncommon), $100; or both tortoises, $225. All above quality specimens. Dick Goergen, P.O. Box 225, Alden NY 14004, (716) 681-4518.

For sale: Send SASE to CRC, P.O. Box 0731, Las Vegas NV 89125-0731 for brochures and list of species available. Limited bookings available for guided tours of herpetological collection sites in Nevada. Call/fax (702) 450-0065. URL <http://www.herp.com/crc/> E-mail <crcsafetie@aol.com>.

Tours: Adventure tours to Madagascar! Join **Bill Love** seeing and photographing fauna and flora, heavily herp-biased, across the world's least known mini-continent. Maximum fun & photo ops assured on every trip. Contact him at: BLUE CHAMELEON VENTURES, P.O. Box 643, Alva FL 33920. TEL: (941) 728-2390, FAX: (941) 728-3276, E-MAIL: <blove@cyberstreet.com>.

Tours: **Road-riding in Costa Rica!** Treat yourself to the trip of a lifetime! Learn about tropical herps, find them, photograph them, see where they live. **Greentracks, Inc.**, offers the best herpetological tours led by internationally acclaimed herpetologists and herpetoculturists. See the Amazon, visit cloud forests, experience the world's greatest rainforest, super sunsets and good company. Call (800) 9-MONKEY.

Video: *Rattlesnake Hunting*, a 60-minute video by a 30-year veteran collector. Don't miss this one! It's as close to being in the field as you can get. (Not a slick commercial production.) Send check or money order for $19.95 plus $3 postage & handling to: D. Wheeler, 2705 Sunset Trail, Riverwoods IL 60015. Allow 4–6 weeks for delivery.

Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. – 1:00 P.M. or after 11:30 P.M. Eastern Time.

Advertisements (cont'd)

Wanted: Any dinosaur toys or dinosaur-related items for 1999 ReptileFest's new DINO-RAMA exhibit next May 1-2, 1999. Any items to be donated should be brought to any CHS general meeting. Contact: Gary Fogel, (773) 935-6938.

Line ads in this publication are run free for CHS members — $2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail <MADadder0@aol.com>.

Chicago Herpetological Society
Statement of Income and Expense

	1998		1997	
	INCOME	EXPENSE	INCOME	EXPENSE
Membership	23,880.60	1147.86	19,477.56	2,588.77
Telephone		523.91		478.03
Miscellaneous Postage		128.00		128.72
Monthly Programs		2,580.55	299.00	977.54
Supplies and Equipment		410.59		48.79
Books and Merchandise	1,917.97	2644.50	5,744.92	4,281.10
Bulletin:				
Printing & Postage		16,762.34		21,543.38
Back Issues	39.50		48.00	
Advertising	1,199.00		1,435.00	
Raffle	676.50		958.25	
General Meetings		1,920.00		1,920.00
CHS ReptileFest	15,780.00	9,884.86	8,253.62	9,420.62
Field Trips	1,665.00	1,665.62		
Shows	.18	813.00	1,440.00	1,073.95
Grants		2,000.00		2,000.00
Donations	450.00	600.00	525.00	200.00
Refreshments/Picnic	60.00	98.00	40.00	
Miscellaneous		129.00		1,301.93
Interest	2,434.74		2,072.91	
Insurance		978.00		876.00
Awards		351.96		125.00
Sale of Book Inventory	3,000.00		16,000.00	
	51,103.49	42,638.19	56,294.26	46,963.83

Cash as of 31 December 1997	**$51,259.67**
1998 Income - 1998 Expense	8,465.30
Illinois sales tax collected in 1998	157.69
Illinois sales tax paid to state in 1998	(158.00)
Cash as of 31 December 1998	**$59,724.66**

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, January 27, at the Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, in Chicago. Veterinarian **Byron De La Navarre**, of the Misener-Holley Animal Hospital in Chicago, will discuss common reptile disorders and how to treat them.

We are required to use the entrance on the west side of the museum. **We are allowed to use the free parking lot to the west of the museum. Entrance to this lot is from McFetridge Drive, the wide street just to the south, between the museum and Soldier Field.** Public transportation is an option: the Roosevelt Road (12th Street) bus now goes directly to the museum, thus providing a connection with the el and subway. This bus service runs until 11 P.M.

Turtle Club

The Chicago Turtle Club will meet on Sunday, January 24, 1:00 – 3:30 P.M., at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Ron Humbert will host a special illustrated presentation on the behavior, habitats and care of map turtles. For info call Lisa, (773) 508-0034 v/tty or visit the CTC web site: <http://www.geocities.com/~chicagoturtle>.

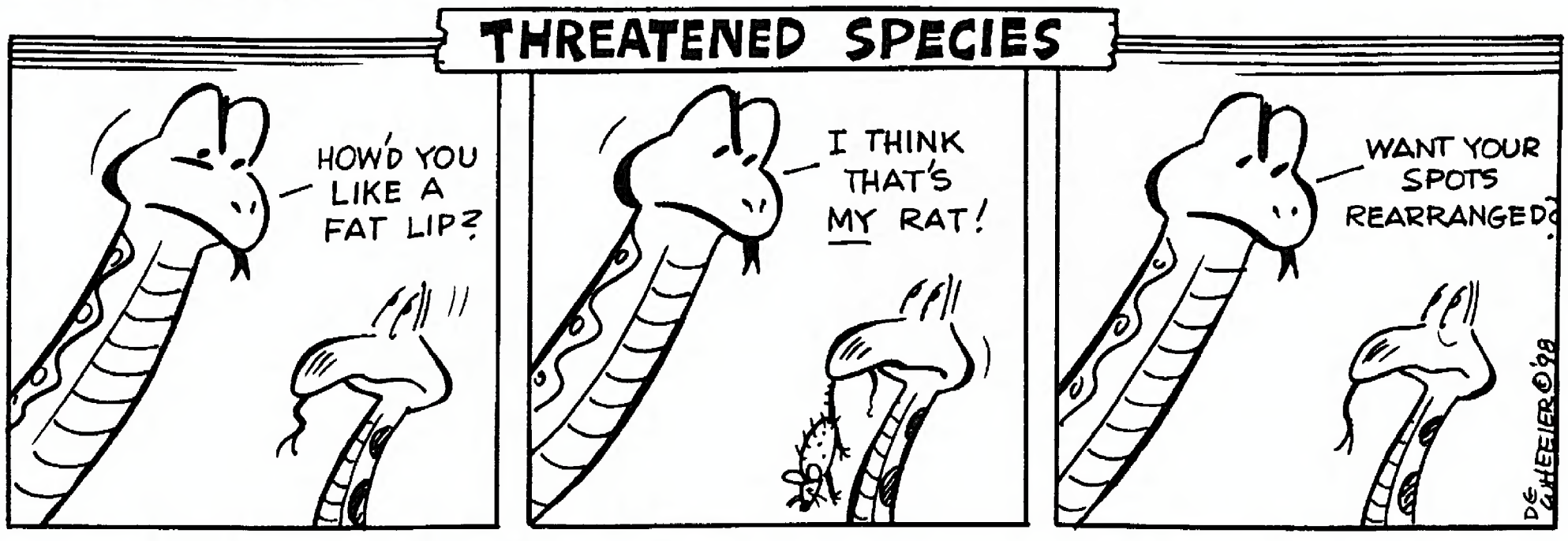
GLOBAL GECKO ASSOCIATION

The Board of Directors is happy to announce the formation of the Global Gecko Association (GGA), an organization to meet the needs of the international gecko community. The GGA will promote interest in geckos in a variety of ways, from responsible captive care, to study in the wild, conservation, academic research and beyond. Furthermore, the GGA will serve people who are interested in geckos by providing a voice and means of communicating and sharing of resources and ideas. Membership in the GGA is open to all, whether hobbyist, professional herpetologist or institution. Members will receive two issues of the GGA journal *Gekko* annually, together with *Chit-Chat*, the regular newsletter. *Gekko* will bring to GGA members articles by many of the leading figures from the world of geckos. *Chit-Chat* keeps members fully updated with GGA events, gecko news items and provides a forum for members to communicate with each other. The GGA provides books and other items of interest to its members at special discounted prices. For information visit the GGA website at <http://www.gekkota.com> or write Global Gecko Association, P.O. Box 25367, Rochester, NY 14625-0367.

MOVING??

Please let us know in plenty of time of any change in your mailing address. The *Bulletin of the Chicago Herpetological Society* is sent to our U.S. members by bulk-rate third class mail. This means that the U.S. Post Office will not forward your *Bulletin* with the rest of your mail. This is so even if you make a special request that your magazines be forwarded (such a request only applies to second class mail).

THE ADVENTURES OF SPOT



NONPROFIT ORG.
U.S. POSTAGE
PAID
PERMIT NO. 9869
CHICAGO, ILLINOIS

CHICAGO HERPETOLOGICAL SOCIETY

Affiliated with the Chicago Academy of Sciences

2060 North Clark Street • Chicago, Illinois 60614